**Support information**

**Determination of the surface thermodynamic properties of glass textiles by inverse gas chromatography at infinite dilution**

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**Table SI1.** Values of ($∆G\_{a}^{sp}\left(T\right)$) (in kJ/mol) of the various polar solvents adsorbed on glass textiles I as a function of the temperature by using the various models and IGC

|  |  |
| --- | --- |
| **DGasp (T) (in kJ/mol)** | **Kiselev** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | 0.79 | 2.86 | 2.28 | 8.76 | 8.61 | -0.26 | 2.65 | 5.73 |
| 316.75 | 0.73 | 3.02 | 2.85 | 8.59 | 8.70 | -0.36 | 2.59 | 5.65 |
| 333.95 | 0.79 | 3.10 | 3.95 | 8.68 | 9.64 | -0.51 | 3.11 | 6.04 |
| 344.45 | 0.52 | 3.10 | 8.06 | 7.55 | 9.29 | -0.72 | 2.71 | 5.64 |
| 354.65 | 0.26 | 3.30 | 8.51 | 7.10 | 9.07 | -0.77 | 2.49 | 5.43 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Spherical** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | 1.41 | 4.98 | 5.23 | 8.22 | 11.42 | 3.42 | 3.50 | 5.66 |
| 316.75 | 1.25 | 4.99 | 5.64 | 8.11 | 11.29 | 3.06 | 3.31 | 5.43 |
| 333.95 | 1.19 | 4.85 | 6.48 | 8.29 | 11.91 | 2.53 | 3.66 | 5.65 |
| 344.45 | 1.01 | 4.97 | 11.77 | 7.48 | 11.54 | 2.19 | 3.19 | 5.27 |
| 354.65 | 0.53 | 4.78 | 11.50 | 6.81 | 10.97 | 1.85 | 2.92 | 4.91 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Geometric** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | 5.34 | 6.03 | 7.01 | 6.35 | 9.41 | 1.64 | 7.22 | 5.91 |
| 316.75 | 5.10 | 5.91 | 6.89 | 6.35 | 9.47 | 1.52 | 7.15 | 5.97 |
| 333.95 | 4.88 | 5.53 | 6.88 | 6.68 | 10.37 | 1.33 | 7.62 | 6.56 |
| 344.45 | 4.64 | 5.51 | 8.67 | 5.94 | 10.15 | 1.16 | 7.25 | 6.38 |
| 354.65 | 4.01 | 5.17 | 8.13 | 5.38 | 9.75 | 1.01 | 6.93 | 6.17 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **VDW** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | 1.29 | 4.04 | 5.15 | 7.63 | 11.49 | 3.15 | 4.02 | 6.03 |
| 316.75 | 1.18 | 4.10 | 5.42 | 7.54 | 11.38 | 2.87 | 3.90 | 5.91 |
| 333.95 | 1.19 | 4.04 | 6.06 | 7.78 | 12.04 | 2.45 | 4.33 | 6.26 |
| 344.45 | 1.05 | 4.20 | 9.95 | 6.99 | 11.69 | 2.17 | 3.90 | 5.96 |
| 354.65 | 0.59 | 4.07 | 9.41 | 6.37 | 11.14 | 1.88 | 3.64 | 5.63 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **R-K** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | 1.32 | 4.08 | 5.18 | 7.65 | 11.52 | 3.14 | 4.02 | 6.03 |
| 316.75 | 1.21 | 4.14 | 5.45 | 7.57 | 11.41 | 2.87 | 3.90 | 5.91 |
| 333.95 | 1.21 | 4.07 | 6.08 | 7.80 | 12.07 | 2.45 | 4.33 | 6.26 |
| 344.45 | 1.07 | 4.23 | 10.13 | 7.01 | 11.71 | 2.16 | 3.90 | 5.95 |
| 354.65 | 0.62 | 4.10 | 10.12 | 6.38 | 11.16 | 1.88 | 3.64 | 5.63 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Cylindrical** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | 1.31 | 7.06 | 7.58 | 6.30 | 7.46 | -1.75 | 3.90 | 3.07 |
| 316.75 | 1.23 | 6.86 | 7.50 | 6.32 | 7.63 | -1.76 | 3.84 | 3.12 |
| 333.95 | 1.27 | 6.39 | 7.56 | 6.68 | 8.69 | -1.79 | 4.35 | 3.71 |
| 344.45 | 1.15 | 6.32 | 7.98 | 5.97 | 8.54 | -1.88 | 3.97 | 3.52 |
| 354.65 | 0.72 | 5.92 | 10.22 | 5.44 | 8.25 | -1.90 | 3.74 | 3.36 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Hamieh model** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 305.15 | -2.86 | -3.96 | 0.74 | 7.93 | 11.39 | -2.86 | 10.48 | 4.73 |
| 316.75 | -2.70 | -3.14 | 1.61 | 7.73 | 11.53 | -2.84 | 10.22 | 4.79 |
| 333.95 | -2.31 | -2.11 | 3.12 | 7.70 | 12.57 | -2.82 | 10.37 | 5.31 |
| 344.45 | -2.26 | -1.34 | 9.25 | 6.78 | 12.46 | -2.90 | 9.89 | 5.15 |
| 354.65 | -2.44 | -0.76 | 8.68 | 6.01 | 12.13 | -2.86 | 9.42 | 5.00 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Topological index**  |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 305.15 | 7.19 | 8.93 | 9.22 | 7.01 | 12.80 | 4.20 | 11.83 | 14.37 |
| 316.75 | 7.03 | 8.77 | 8.90 | 6.94 | 12.77 | 4.18 | 11.99 | 14.50 |
| 333.95 | 6.95 | 8.35 | 8.58 | 7.18 | 13.55 | 4.13 | 12.79 | 15.20 |
| 344.45 | 6.83 | 8.34 | 8.44 | 6.38 | 13.29 | 4.09 | 12.67 | 15.18 |
| 354.65 | 6.26 | 7.94 | 7.93 | 5.76 | 12.78 | 3.99 | 12.46 | 14.92 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Deformation polarizability** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 305.15 | 8.39 | -0.70 | 5.14 | 8.30 | 15.35 | 4.14 | 13.46 | 16.19 |
| 316.75 | 8.18 | -0.51 | 4.97 | 8.18 | 15.23 | 4.13 | 13.55 | 16.26 |
| 333.95 | 7.74 | -0.72 | 4.56 | 8.05 | 15.57 | 3.78 | 13.97 | 16.55 |
| 344.45 | 7.89 | -0.22 | 4.81 | 7.53 | 15.55 | 4.04 | 14.11 | 16.80 |
| 354.65 | 7.28 | -0.22 | 4.47 | 6.85 | 14.94 | 3.94 | 13.84 | 16.46 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Vapor pressure** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 305.15 | 0.47 | 0.35 | 4.12 | 6.51 | 9.90 | 1.11 | 11.13 | 8.90 |
| 316.75 | 0.53 | 0.50 | 4.04 | 6.51 | 9.92 | 1.18 | 11.38 | 9.28 |
| 333.95 | 0.78 | 0.54 | 4.07 | 6.83 | 10.79 | 1.27 | 12.32 | 10.33 |
| 344.45 | 0.79 | 0.72 | 4.09 | 6.08 | 10.55 | 1.28 | 12.27 | 10.48 |
| 354.65 | 3.30 | 3.47 | 6.63 | 8.31 | 12.94 | 4.09 | 14.94 | 13.28 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Boiling point** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 305.15 | 0.25 | 2.32 | 1.47 | 6.64 | 9.76 | 0.83 | 9.39 | 8.98 |
| 316.75 | 0.34 | 2.39 | 1.43 | 6.58 | 9.84 | 0.94 | 9.64 | 9.31 |
| 333.95 | 0.66 | 2.35 | 1.54 | 6.86 | 10.80 | 1.10 | 10.59 | 10.31 |
| 344.45 | 0.66 | 2.46 | 1.55 | 6.05 | 10.58 | 1.10 | 10.49 | 10.39 |
| 354.65 | 0.40 | 2.34 | 1.37 | 5.45 | 10.22 | 1.15 | 10.41 | 10.36 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Dhvap** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 305.15 | 0.65 | 0.25 | 1.96 | 6.02 | 9.28 | 1.42 | 8.46 | 8.07 |
| 316.75 | 0.73 | 0.41 | 1.91 | 5.99 | 9.38 | 1.51 | 8.74 | 8.43 |
| 333.95 | 1.00 | 0.46 | 1.97 | 6.28 | 10.35 | 1.61 | 9.72 | 9.46 |
| 344.45 | 1.02 | 0.63 | 1.99 | 5.51 | 10.16 | 1.63 | 9.67 | 9.59 |
| 354.65 | 0.73 | 0.59 | 1.78 | 4.93 | 9.80 | 1.64 | 9.61 | 9.58 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **DHvap(T)** |  |  |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 305.15 | 0.71 | 0.50 | 1.98 | 6.16 | 9.28 | 1.46 | - | - |
| 316.75 | 0.38 | 0.42 | 1.39 | 5.58 | 8.89 | 1.36 | - | - |
| 333.95 | 0.15 | 0.18 | 0.77 | 5.16 | 9.25 | 1.30 | - | - |
| 344.45 | -0.21 | 0.11 | 0.31 | 3.91 | 8.63 | 1.11 | - | - |
| 354.65 | -0.98 | -0.11 | -0.44 | 3.01 | 7.73 | 0.58 | - | - |

**Table SI2.** Values of ($∆G\_{a}^{sp}\left(T\right)$) (in kJ/mol) of the various polar solvents adsorbed on glass textiles I as a function of the temperature by using the various models and IGC

|  |  |
| --- | --- |
| **DGasp (T) (in kJ/mol)** | **Kiselev** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | -0.13 | 1.81 | 1.16 | 8.05 | 7.62 | -0.81 | 2.09 | 5.22 |
| 307.85 | 0.57 | 2.40 | 2.15 | 8.11 | 8.46 | -0.11 | 2.94 | 5.58 |
| 313.45 | 0.64 | 2.64 | 2.44 | 8.14 | 8.61 | -0.13 | 3.07 | 5.80 |
| 323.75 | 0.61 | 2.58 | 8.72 | 7.97 | 9.06 | -0.24 | 3.50 | 6.11 |
| 333.45 | 0.66 | 2.69 | 9.44 | 8.17 | 9.54 | -0.29 | 3.52 | 6.10 |
| 342.65 | 0.58 | 8.11 | 9.42 | 11.22 | 9.34 | -0.40 | 3.24 | 5.91 |
| 353.25 | 0.17 | 7.73 | 8.73 | 10.85 | 8.98 | -0.51 | 3.03 | 5.63 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Spherical** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | 1.15 | 4.38 | 4.61 | 7.96 | 11.03 | 3.60 | 3.93 | 5.98 |
| 307.85 | 1.12 | 4.33 | 4.83 | 7.62 | 11.01 | 3.24 | 3.71 | 5.48 |
| 313.45 | 1.14 | 4.51 | 5.07 | 7.68 | 11.07 | 3.11 | 3.77 | 5.63 |
| 323.75 | 1.22 | 4.58 | 12.85 | 7.85 | 11.50 | 2.84 | 4.15 | 6.00 |
| 333.45 | 1.04 | 4.32 | 12.90 | 7.81 | 11.65 | 2.53 | 4.07 | 5.77 |
| 342.65 | 0.90 | 11.11 | 13.38 | 6.99 | 11.30 | 2.25 | 3.71 | 5.51 |
| 353.25 | 0.43 | 10.95 | 12.64 | 14.24 | 10.75 | 1.92 | 3.43 | 5.16 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Geometric** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | 4.84 | 5.45 | 6.57 | 6.19 | 9.08 | 1.81 | 7.26 | 6.04 |
| 307.85 | 4.74 | 5.28 | 6.38 | 5.92 | 9.20 | 1.64 | 7.17 | 5.78 |
| 313.45 | 4.73 | 5.39 | 6.37 | 6.01 | 9.33 | 1.62 | 7.31 | 6.06 |
| 323.75 | 4.72 | 5.34 | 8.98 | 6.29 | 9.93 | 1.55 | 7.75 | 6.64 |
| 333.45 | 4.45 | 4.94 | 8.64 | 6.31 | 10.21 | 1.41 | 7.74 | 6.60 |
| 342.65 | 4.24 | 7.03 | 8.75 | 5.55 | 9.99 | 1.28 | 7.44 | 6.50 |
| 353.25 | 3.64 | 6.63 | 8.24 | 9.36 | 9.61 | 1.13 | 7.13 | 6.29 |
|   |   |   |   |   |   |   |  |  |
| **DGasp (T) (in kJ/mol)** | **VDW** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | 1.01 | 3.48 | 4.62 | 7.40 | 11.08 | 3.29 | 4.36 | 6.26 |
| 307.85 | 1.02 | 3.47 | 4.73 | 7.08 | 11.08 | 3.00 | 4.20 | 5.85 |
| 313.45 | 1.06 | 3.67 | 4.90 | 7.14 | 11.15 | 2.91 | 4.30 | 6.05 |
| 323.75 | 1.18 | 3.79 | 10.70 | 7.36 | 11.60 | 2.71 | 4.73 | 6.50 |
| 333.45 | 1.03 | 3.56 | 10.41 | 7.33 | 11.76 | 2.46 | 4.69 | 6.34 |
| 342.65 | 0.92 | 9.34 | 10.82 | 6.54 | 11.44 | 2.23 | 4.36 | 6.13 |
| 353.25 | 0.49 | 8.46 | 10.39 | 12.21 | 10.90 | 1.95 | 4.10 | 5.82 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **R-K** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | 1.04 | 3.52 | 4.65 | 7.42 | 11.10 | 3.29 | 4.36 | 6.26 |
| 307.85 | 1.04 | 3.50 | 4.76 | 7.10 | 11.10 | 3.00 | 4.20 | 5.85 |
| 313.45 | 1.09 | 3.70 | 4.93 | 7.17 | 11.17 | 2.91 | 4.31 | 6.05 |
| 323.75 | 1.21 | 3.82 | 10.88 | 7.38 | 11.62 | 2.70 | 4.73 | 6.49 |
| 333.45 | 1.06 | 3.59 | 11.12 | 7.35 | 11.79 | 2.45 | 4.69 | 6.33 |
| 342.65 | 0.95 | 9.04 | 11.28 | 6.56 | 11.46 | 2.22 | 4.37 | 6.12 |
| 353.25 | 0.51 | 8.84 | 10.79 | 12.17 | 10.92 | 1.95 | 4.10 | 5.81 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Cylindrical** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | 1.02 | 6.43 | 7.07 | 6.13 | 7.22 | -1.37 | 4.21 | 3.43 |
| 307.85 | 1.05 | 6.22 | 6.91 | 5.88 | 7.42 | -1.47 | 4.10 | 3.14 |
| 313.45 | 1.11 | 6.30 | 6.92 | 5.98 | 7.59 | -1.45 | 4.24 | 3.42 |
| 323.75 | 1.24 | 6.19 | 6.83 | 6.28 | 8.28 | -1.42 | 4.71 | 4.01 |
| 333.45 | 1.11 | 5.74 | 10.97 | 6.31 | 8.65 | -1.47 | 4.72 | 3.97 |
| 342.65 | 1.02 | 8.57 | 10.65 | 5.58 | 8.50 | -1.53 | 4.43 | 3.87 |
| 353.25 | 0.60 | 8.04 | 9.92 | 10.53 | 8.22 | -1.56 | 4.19 | 3.71 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Hamieh model** |
| **T (K)** | **CCl4** | **CH2Cl2** | **CHCl3** | **Ether** | **THF** | **Toluene** | **EA** | **Acetone** |
| 297.95 | 3.15 | 3.48 | 0.07 | 5.59 | 9.30 | 2.10 | 10.18 | 8.53 |
| 307.85 | 3.50 | 5.92 | 2.34 | 7.11 | 10.64 | 2.65 | 11.27 | 10.00 |
| 313.45 | 3.62 | 7.35 | 3.62 | 7.81 | 11.81 | 3.03 | 11.98 | 10.77 |
| 323.75 | 4.02 | 9.80 | 5.88 | 9.26 | 13.59 | 3.74 | 13.28 | 12.18 |
| 333.45 | 4.34 | 12.50 | 8.21 | 10.63 | 15.26 | 4.41 | 14.50 | 13.52 |
| 342.65 | 4.67 | 14.52 | 10.31 | 11.94 | 16.86 | 5.04 | 15.66 | 14.79 |
| 353.25 | 5.01 | 17.12 | 12.73 | 13.45 | 18.70 | 5.77 | 17.00 | 16.24 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Topological index**  |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | EA | Acetone |
| 297.95 | 6.48 | 10.29 | 6.54 | 6.83 | 12.25 | 4.11 | 11.38 | 13.78 |
| 307.85 | 6.46 | 9.92 | 6.41 | 6.51 | 12.31 | 4.03 | 11.48 | 13.62 |
| 313.45 | 6.50 | 9.81 | 6.54 | 6.58 | 12.42 | 4.06 | 11.74 | 13.96 |
| 323.75 | 6.55 | 9.70 | 6.51 | 6.80 | 12.93 | 4.06 | 12.34 | 14.57 |
| 333.45 | 6.36 | 9.30 | 6.14 | 6.77 | 13.15 | 4.00 | 12.51 | 14.58 |
| 342.65 | 6.23 | 9.12 | 6.15 | 5.97 | 12.88 | 3.96 | 12.38 | 14.56 |
| 353.25 | 5.71 | 8.60 | 5.87 | 5.38 | 12.41 | 3.86 | 12.20 | 14.34 |
| **DGasp (T) (in kJ/mol)** | **Deformation polarizability** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | EA | Acetone |
| 297.95 | 7.61 | 1.22 | 2.70 | 8.04 | 14.65 | 4.06 | 12.91 | 15.49 |
| 307.85 | 7.57 | 1.09 | 2.67 | 7.70 | 14.65 | 3.98 | 12.98 | 15.29 |
| 313.45 | 7.59 | 1.11 | 2.85 | 7.74 | 14.72 | 4.01 | 13.20 | 15.60 |
| 323.75 | 7.60 | 1.32 | 2.95 | 7.92 | 15.15 | 4.01 | 13.76 | 16.15 |
| 333.45 | 7.37 | 1.19 | 2.70 | 7.86 | 15.30 | 3.95 | 13.87 | 16.11 |
| 342.65 | 7.22 | 1.22 | 2.80 | 7.03 | 14.97 | 3.91 | 13.71 | 16.06 |
| 353.25 | 6.65 | 1.05 | 2.67 | 6.39 | 14.40 | 3.82 | 13.47 | 15.76 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Vapor pressure** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | EA | Acetone |
| 297.95 | 0.17 | 1.70 | 2.21 | 6.33 | 9.54 | 1.22 | 10.67 | 8.60 |
| 307.85 | 0.30 | 1.74 | 2.05 | 6.07 | 9.64 | 1.19 | 10.86 | 8.61 |
| 313.45 | 0.42 | 1.97 | 2.06 | 6.16 | 9.76 | 1.25 | 11.15 | 9.05 |
| 323.75 | 0.67 | 2.15 | 2.23 | 6.43 | 10.33 | 1.33 | 11.84 | 9.87 |
| 333.45 | 0.65 | 1.96 | 2.08 | 6.45 | 10.60 | 1.35 | 12.07 | 10.08 |
| 342.65 | 0.67 | 2.13 | 2.09 | 5.69 | 10.37 | 1.36 | 12.01 | 10.22 |
| 353.25 | 0.38 | 2.07 | 1.88 | 5.14 | 9.97 | 1.37 | 11.89 | 10.23 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Boiling point** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | EA | Acetone |
| 297.95 | -0.03 | 4.08 | -0.73 | 6.49 | 9.40 | 0.98 | 9.11 | 8.72 |
| 307.85 | 0.11 | 3.86 | -0.69 | 6.17 | 9.53 | 0.96 | 9.25 | 8.68 |
| 313.45 | 0.26 | 3.86 | -0.44 | 6.27 | 9.69 | 1.05 | 9.56 | 9.11 |
| 323.75 | 0.52 | 3.94 | -0.24 | 6.47 | 10.28 | 1.13 | 10.22 | 9.87 |
| 333.45 | 0.51 | 3.73 | -0.40 | 6.46 | 10.58 | 1.16 | 10.45 | 10.04 |
| 342.65 | 0.55 | 3.71 | -0.20 | 5.68 | 10.39 | 1.20 | 10.38 | 10.15 |
| 353.25 | 0.28 | 3.42 | -0.20 | 5.09 | 10.03 | 1.23 | 10.29 | 10.12 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **Dhvap** |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 297.95 | 0.33 | 2.12 | -0.29 | 5.90 | 8.93 | 1.51 | 8.20 | 7.85 |
| 307.85 | 0.47 | 1.96 | -0.25 | 5.61 | 9.08 | 1.49 | 8.39 | 7.84 |
| 313.45 | 0.60 | 1.97 | -0.02 | 5.69 | 9.24 | 1.56 | 8.69 | 8.27 |
| 323.75 | 0.87 | 2.15 | 0.19 | 5.95 | 9.87 | 1.64 | 9.41 | 9.08 |
| 333.45 | 0.86 | 2.00 | 0.02 | 5.95 | 10.18 | 1.67 | 9.66 | 9.27 |
| 342.65 | 0.88 | 2.01 | 0.20 | 5.17 | 10.00 | 1.68 | 9.61 | 9.40 |
| 353.25 | 0.59 | 1.80 | 0.18 | 4.61 | 9.65 | 1.69 | 9.56 | 9.40 |
|  |  |  |  |  |  |  |  |  |
| **DGasp (T) (in kJ/mol)** | **DHvap(T)** |  |  |
| **T(K)** | **CCl4** | **DCM** | **TCM** | **Ether** | **THF** | **Toluene**  | **EA** | **Acetone** |
| 297.95 | 0.58 | 2.44 | 0.01 | 6.34 | 9.17 | 1.55 | - | - |
| 307.85 | 0.35 | 2.07 | -0.42 | 5.56 | 8.89 | 1.37 | - | - |
| 313.45 | 0.22 | 1.89 | -0.52 | 5.31 | 8.74 | 1.28 | - | - |
| 323.75 | 0.08 | 1.79 | -0.82 | 5.03 | 8.91 | 1.18 | - | - |
| 333.45 | -0.51 | 1.51 | -1.59 | 4.89 | 8.58 | 0.27 | - | - |
| 342.65 | -0.92 | 1.27 | -1.93 | 3.64 | 7.91 | -0.01 | - | - |
| 353.25 | -2.21 | 0.18 | -3.07 | 1.94 | 6.49 | -0.81 | - | - |

**Figure SI1.** Variations of $∆G\_{a}^{sp}$ of the various solvents (CCl4, CH2Cl2, toluene and diethyl ether, ethyl acetate) adsorbed on glass textiles I and II as a function of the temperature for the different models and methods.

**Figure SI2.** Variations of $\left(\frac{-∆S\_{a}^{sp}}{AN^{'}}\right) $as a function of $\left(\frac{DN^{'}}{AN^{'}}\right)$ by using the various molecular models and IGC methods for the glass textiles I and II.

**Tables SI3.** Values of the enthalpic acid base constants $K\_{A}$ and $K\_{D} $and the entropic acid base constants $ω\_{A}$ and $ω\_{D} $of the glass textiles I and II and the corresponding acid base ratios.

|  |
| --- |
| **Glass textiles I** |
| **Models and IGC methods** | ***KA*** | ***KD*** | ***KA/KD*** | 10-3*****A*** | 10-3***D*** | ***D/********A*** |
| **Kiselev** | 0.019 | -0.255 | -13.28 | 0.39 | -0.98 | -2.55 |
| **Spherical** | 0.025 | -0.528 | -21.16 | 0.35 | -2.16 | -6.16 |
| **Geometric** | 0.129 | 0.321 | 2.50 | 0.01 | 1.00 | 124.66 |
| **Van der Waals** | 0.025 | 0.974 | 38.55 | -0.21 | 2.16 | -10.19 |
| **Redlich-Kwong** | 0.131 | 0.302 | 2.31 | 0.01 | 0.93 | 70.89 |
| **Cylindrical** | 0.133 | 0.412 | 3.09 | 0.03 | 1.23 | 42.34 |
| **Hamieh model** | 0.434 | 1.080 | 2.49 | 0.34 | 0.73 | 2.15 |
| **Topological index** | -0.002 | 0.111 | -66.32 | 0.36 | 0.37 | 1.01 |
| **Deformation polarizability** | 0.003 | 1.331 | 412.59 | 0.38 | 4.32 | 11.41 |
| **Vapor pressure** | 0.145 | 0.807 | 5.55 | -0.03 | 1.28 | -50.37 |
| **Boiling point** | 0.024 | 0.224 | 9.50 | 0.40 | 0.28 | 0.70 |
| **DHvap** | 0.165 | 1.053 | 6.37 | 0.19 | 3.40 | 17.96 |
| **DHvap(T)** | 0.012 | 1.042 | 87.25 | -0.34 | 1.57 | -4.62 |
| **Aveage values** | 0.096 | 0.502 | 5.25 | 0.14 | 1.02 | 7.06 |
| **Glass textiles II** |
| **Models and IGC methods** | ***KA*** | ***KD*** | ***KA/KD*** | *****A*** | ***D*** | ***D/********A*** |
| **Kiselev** | 0.041 | 0.921 | 22.54 | 0.45 | 2.75 | 6.14 |
| **Cylindrical** | 0.054 | 0.497 | 9.23 | 1.71 | 1.71 | 1.00 |
| **VDW** | -0.035 | 0.553 | -15.83 | 0.28 | 1.81 | 6.51 |
| **Geometric** | 0.057 | -0.676 | -11.90 | 0.47 | -1.30 | -2.75 |
| **Redlich-Kwong** | -0.316 | 1.385 | -4.38 | -0.57 | 4.31 | -7.62 |
| **Spherical** | -0.130 | 1.018 | -7.85 | -0.03 | 3.34 | -111.79 |
| **Hamieh** | 0.405 | 1.523 | 3.76 | 1.68 | 5.79 | 3.44 |
| **Boiling point** | 0.005 | 0.229 | 45.12 | 0.38 | 0.74 | 1.94 |
| **Vapor pressure** | 0.013 | 0.531 | 39.69 | 0.33 | 1.09 | 3.26 |
| **Deformation polarizability** | 0.149 | 0.269 | 1.80 | -0.28 | 1.42 | -5.16 |
| **DHvap** | 0.014 | 0.224 | 16.20 | 0.41 | 0.34 | 0.83 |
| **DHvap(T)** | 0.191 | 1.685 | 8.81 | 0.28 | 5.53 | 19.61 |
| **Topological index** | 0.106 | 0.965 | 9.13 | -0.04 | 1.44 | -38.03 |