

A unique example of a high symmetry three- and four-connected hydrogen bonded 3D-network

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Additional experimental data for [Ag(4-aminopyridine)₂]NO₃ 1:

IR, KBr (cm^{-1}): 3436 s, 3345 s, 3205 ms, 3074 s, 2991 ms, 2763 m, 2698 m, 2630 m, 2553 m, 2394 wm, 1916 w, 1763 w, 1645 s, 1615 vs, 1600 vs, 1559 ms, 1510 vs, 1483 m,sh, 1432 m, 1382 vs, 1332 s, 1275 ms, 1215 s, 1062 m, 1010 ms, 990 s, 841 w, 820 s, 735 wm, 681 m, 593 m, 512 ms, 430 ms, 366 m, 342 m, 316 m, 293 m, 269 ms, 232 s.

Table S1 Selected geometric measurements for [Ag(4-aminopyridine)₂]NO₃ 1

Bond or interaction	Distance/Å	Angle /°
Ag1-N1A	2.113(6)	N1A-Ag1-N1B 173.4(2)
Ag1-N1B	2.137(6)	N1C-Ag2-N1C ⁱ 173.0(3)
Ag2-N1C	2.125(6)	
Ag1...O1D	2.867(6)	
Ag1...O3D	2.900(6)	
Ag2...O1E	2.889(6)	
N2A...O3D ⁱⁱⁱ	3.178(9)	N2A- 154 H2A1...O3D ⁱⁱⁱ
N2A...O2D ^{iv}	2.930(10)	N2A- 168 H2A2...O2D ^{iv}
N2B...O1E ^v	3.154(9)	N2B- 155 H2B1...O1E ^v
N2B...O3E	2.936(8)	N2B- 167 H2B2...O3E
N2C...O1D ^{vi}	3.160(9)	N2C- 151 H2C1...O1D ^{vi}
N2C...O2D	2.943(9)	N2C- 168 H2C2...O2D
Centr.-centr. ^a	3.460(4)	
Centr.-centr. ^a	3.643(4)	

^a Centr. = pyridyl centroid. Symmetry transformations used to generate equivalent atoms:

(i): -x+1,y,-z+1/2 (ii): -x,y,-z+1/2 (iii): -x+1,-y+1,-z

(iv): -x+3/2,-y+1/2,-z (v): x+1/2,y+1/2,z (vi): x-1/2,y-1/2,z

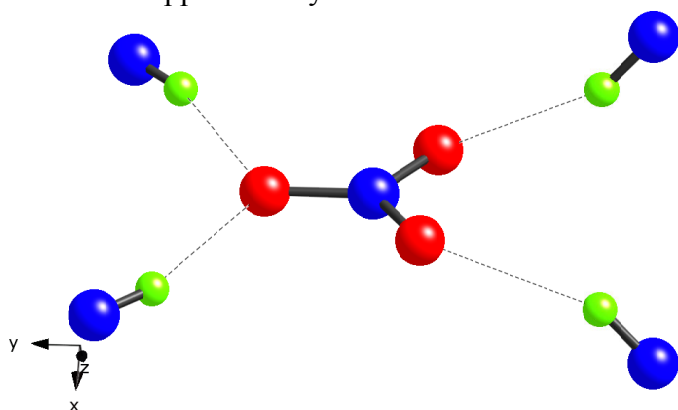


Fig. S1 Hydrogen bonds to the nitrate ion in **1**.

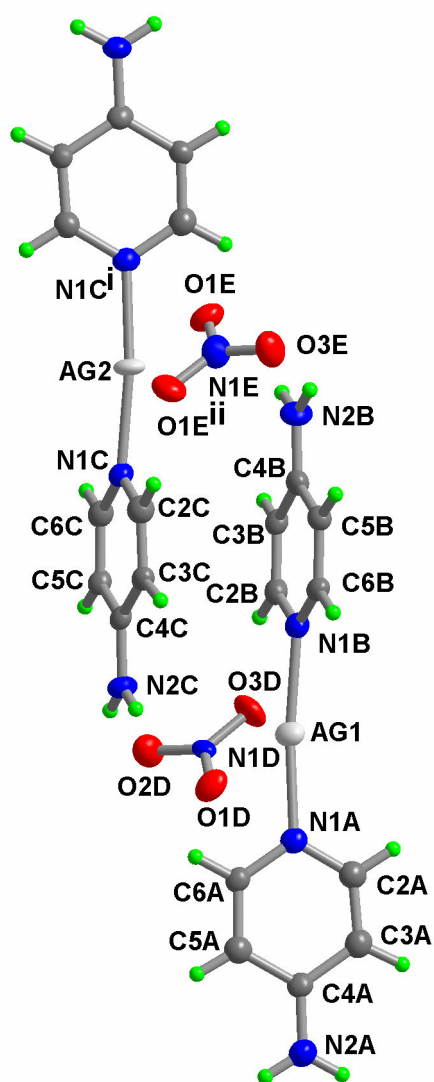


Fig. S2 ORTEP-type drawing of compound **1**. Thermal ellipsoids shown at 50% probability level. Symmetry transformations used to generate equivalent atoms: (i): $-x+1, y, -z+1/2$

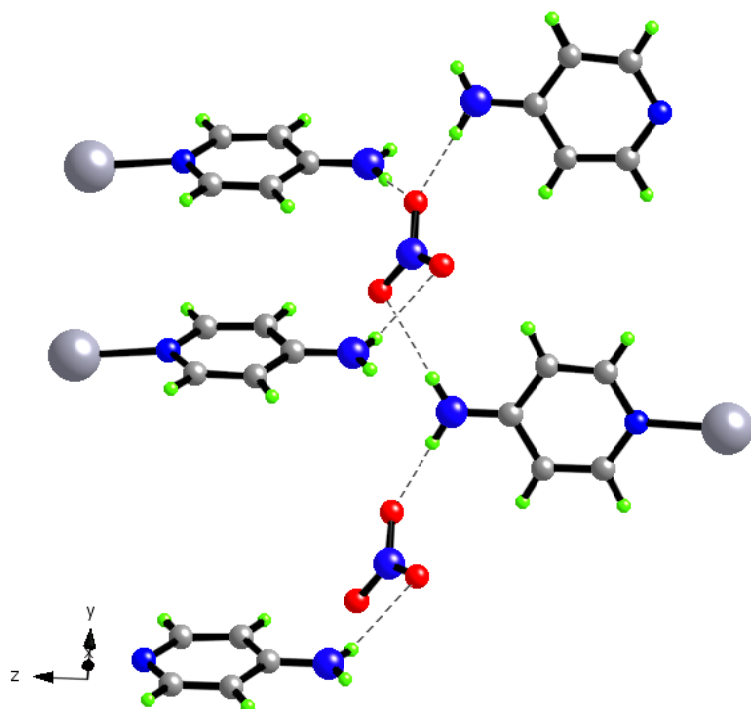


Fig. S3. Another view of the hydrogen-bond interactions in **1**.

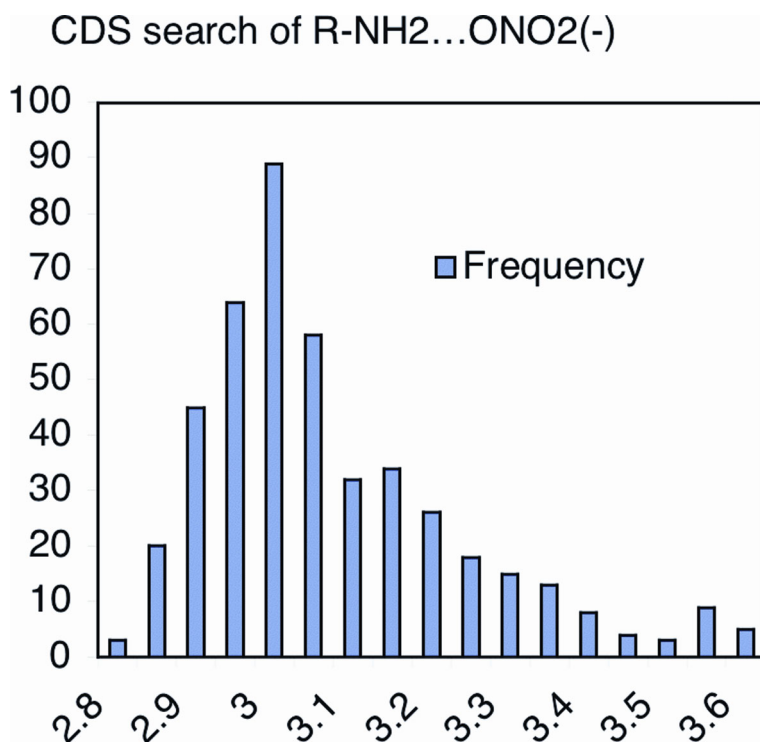


Fig S4. CSD search: Plot of number of hits in the CSD database for R-N-H...O-NO₂ displaying the N...O distances for N-H...O angles >150° (R-values < 10%, error and disorder free, total of 469 structures.).

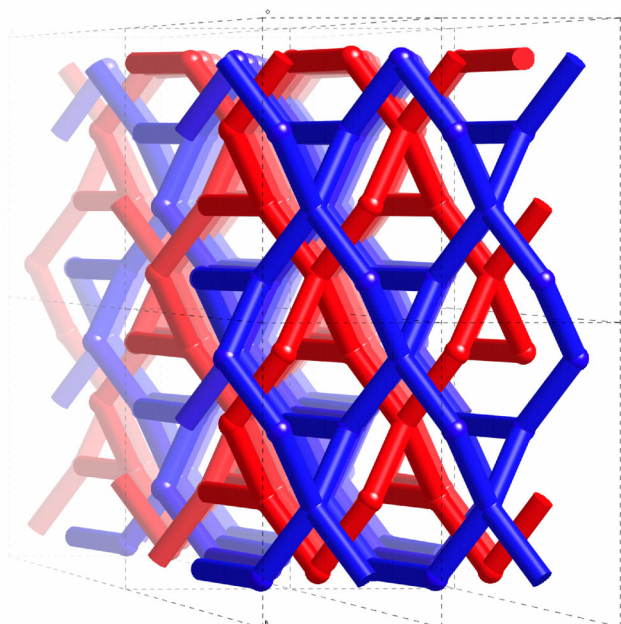


Fig S5. Another view of the two interpenetrating nets in **1**.