

## Two-Dimensional Network Assembled by Hydrogen Bonds : Crystal Structure of $[\text{Fe}(\text{L})_2(\text{NCS})_2(\text{H}_2\text{O})_2] \cdot 2\text{H}_2\text{O}$ (L=2-aminopyrimidine)

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The crystal structure of  $[\text{Fe}(\text{L})_2(\text{NCS})_2(\text{H}_2\text{O})_2] \cdot 2\text{H}_2\text{O}$  (L=2-Aminopyrimidine) was determined by the X-ray diffraction method. The crystal was found to be triclinic, space group  $P\bar{1}$ ,  $a=7.373(1)\text{Å}$ ,  $b=7.922(2)\text{Å}$ ,  $c=9.150(2)\text{Å}$ ,  $\alpha=67.15(2)^\circ$ ,  $\beta=72.67(2)^\circ$ ,  $\gamma=76.62(2)^\circ$ ,  $V=466.1(2)\text{Å}^3$ ,  $Z=1$ ,  $D_c=1.547\text{ g/cm}^3$ ,  $R=0.027$ , and  $\omega R=0.059$ . The central Fe(II) atom is ligated by hexa-coordination from two pyrimidine N atoms, two isothiocyanato N atoms, and two O atoms in  $\text{H}_2\text{O}$  molecules. The coordination geometry of the central Fe(II) atom is close to octahedron with the distances of Fe-N(L), of Fe-N(NCS), of Fe-O( $\text{H}_2\text{O}$ ), which are 2.246Å, 2.140Å, and 2.115Å, respectively. The interesting feature of the complex is that there are two intramolecular hydrogen bondings(Fe-O1 $\cdots$ O2) and two intermolecular hydrogen bondings through water molecule(O2). The water molecule(O2) forms two intermolecular hydrogen bondings along with the coordinated water(O1') of the adjacent molecule and with N atom of the 2-aminopyrimidine of another adjacent molecule. With regard to the above hydrogen bondings, the complex is found to be shaped with two-dimensional networks.