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New Molecular-based quasi-2D S=1/2 Heisenberg Antiferromagnet CHRISTOPHER LANDEE, FAN XIAO, VELI SELMANI, MARK TURNBULL, Clark University, JAN WIKAIRA, University of Canterbury, NZ — We report on the magnetic properties of a newly synthesized molecular-based quasi-2D S=1/2 Heisenberg antiferromagnet, $\text{Cu}(\text{pz})_2(\text{HOpy})_2(\text{ClO}_4)_2$, where pz = pyrazine and HOpy = 2-hydroxypyridine. Powder susceptibility studies show the intralayer exchange J to be 7 K, with the ordering temperature less than 1.8 K. The compound consists of layers of Cu(II) ions bridged by pyrazine molecules into a square lattice, with the bulky HOpy molecules coordinated in the axial sites, providing exceptional isolation between layers (layer-layer distance = 12.18 Å). Unlike all other members of the copper/pyrazine family of 2D antiferromagnets, no anions are coordinated to the copper sites, a factor that may influence the exchange anisotropy that can dominate the low-temperature behavior in this family. Recent results will be reported.

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