

### **p-phenylenediammonium tetrabromoaurate(III) bromide monohydrate**

The structure of the title compound,  $(C_6H_{10}N_2)[AuBr_4]Br \cdot H_2O$ , consists of twin parallel stacks of square-planar  $[AuBr_4^-]$  polyhedra ordered along the a axis. The stacks are interleaved such that one Br atom of the  $AuBr_4^-$  square planes of one twin stack lies directly above or behind the Au atom from the neighboring stack, creating a pseudo-Jahn-Teller-like distorted octahedral coordination environment around the Au-III ions. The twin stacks are separated by parallel stacks of p-phenylenediammonium cations, and the structure is presumably held together by coulombic forces between the interdigitated negatively and positively charged one-dimensional stacks. The water molecule, the tetrabromoaurate anion and the bromide anion all lie on mirror planes.