The Silver(I) Mercury(II) Oxide Nitrate with the Empirical Formula $AgHg_2NO_5$

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Crystal Structure, Silver Mercury(II) Oxide Nitrate

The title compound was prepared by solid state reaction of Ag_2O with $Hg(NO_3)_2 \cdot H_2O$ in air at 350 °C. Its crystal structure was determined from single-crystal diffractometer data: *Pnma*, $a = 620.1(1)$ pm, $b = 670.1(1)$ pm, $c = 1267.5(2)$ pm, $Z = 4$, $R = 0.026$ for 586 structure factors and 33 variable parameters. The compound may be represented by the formula $Ag(HgO)_2NO_3$. The mercury(II) together with the oxygen atoms form zig-zag chains with linear coordination of the mercury atoms. The oxygen atoms of these chains are linked via silver(I) atoms, thus forming two-dimensionally infinite nets, which contain the trigonal planar nitrate groups in interstices. Thus, only secondary Hg-O and Ag-O bonds are formed between the nets.