Crystal structure and bonding in the new mineral AsSbO$_4$

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A new mineral with ideal chemistry As$_2$SbO$_4$ has been found in leucite, lalodieite, and quartz in a vein in massive tennantite from the Tsumeb mine, Namibia. The symmetry is monoclinic, P2$_1$/c, with a = 7.276 Å, b = 17.054 Å, and c = 7.240 Å. The crystal structure is similar to those of the As$_2$SbO$_4$ in the alunite supergroup. The results for synthetic Ge-rich and Ga-rich members are similar to those of the As-rich members of the group.