

## MIXED-METAL PENTAFLUORIDES

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Compounds of the type  $MF_5.M'F_5$  ( $M \neq M' = Nb, Ta, Ru, V$ ) have been prepared by the static fluorination of two intimately-mixed metal powders. The products of these fluorinations have been purified by sublimation and characterised by vibrational spectroscopy, mass spectrometry, X-ray fluorescence and X-ray single crystal analysis.

In the solid state, transition metal pentafluorides have been assumed to adopt three different structures, the cis linear fluorine-bridged tetramer (e.g.  $NbF_5$ ), the cis bent fluorine-bridged tetramer (e.g.  $RuF_5$ ) and the cis bent fluorine-bridged chain (e.g.  $VF_5$ ). In this paper comparison of the mixed-metal pentafluoride structures will be made with those of the pure pentafluorides above.