

NEW FLUORINE COMPOUNDS OF Fe AND Mn

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Mixtures of Mn and Fe with Sb and Pt (in form of the metals or of their lower fluorides) have been treated with ca. 200 bar of F_2 at elevated temperatures for several days. In all cases a small amount of deposit was found at the colder part of the Ni or monel reaction vessel. Chemical analysis showed the ratio Mn (Fe): Sb (Pt) to be 1 : 1 for these solids. All findings obtained so far (chemical behaviour, magnetic moments) indicate the Mn and Fe to be in the pentavalent state, suggesting formulas $MnF_5 \cdot SbF_5$, $MnF_5 \cdot PtF_5$, $FeF_5 \cdot SbF_5$ and $FeF_5 \cdot PtF_5$, either in a fluorine bridged or ionic structure for these new compounds.