

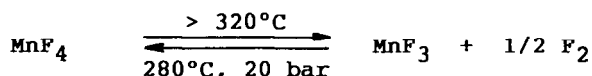
MnF₄: PREPARATION AND PROPERTIES

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In the course of systematic investigations of the behavior of transition metals in the fluorine combustion analysis [1] favorable conditions for the synthesis of MnF₄ were found. MnF₄ proved to be more stable than previously [2] assumed. Thermolysis data showed that liberation of fluorine occurs only at temperatures above 320°C; rapidly above 360°C:



Furthermore, for the synthesis a temperature of 280°C, with a fivefold fluorine excess is sufficient.

MnF₄ reacts with conc. hydrofluoric acid to a yellow solution of MnF₆²⁻.

MnF₄ at room temperature is not as reactive as previously assumed, and the reasons for these discrepancies will be discussed. To characterize MnF₄, infrared and Raman spectra were recorded for the first time and compared with related compounds. MnF₄ as a source of fluorine will be discussed.

- 1 E. Jacob, Fresenius Z. Anal. Chem., 333 760 (1989); E. Jacob and M. Harris in: D. Hirschfeld, Edt.: Nichtmetalle in Metal-len '90 DGM Inf.ges. 79 (1990)
- 2 Gmelin, Handb. Anorg. Chem., Mangan C4 92 (1980); V.V. Ostropikov and E. G. Rakov, Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Technol. 32 3 (1989)