

**THE $\text{Sr}_2\text{M}^{2+}\text{M}^{3+}\text{F}_9$ FLUORIDES ($\text{M}' = \text{Mg, Mn, Fe, Co, Ni, Zn};$
 $\text{M}'' = \text{Al, Cr, Fe, Ga}$).**

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New $\text{Sr}_2\text{M}^{2+}\text{M}^{3+}\text{F}_9$ ($\text{M}' = \text{Mg, Mn, Fe, Co, Ni, Zn}; \text{M}'' = \text{Al, Cr, Fe, Ga}$) compounds have been prepared. X-ray diffraction studies have allowed to identify these materials as isostructural and crystallizing with tetragonal symmetry. The unit cell parameters have been determined at room temperature and correlated to the size of the different M^{2+} and M^{3+} cations investigated.

The crystalline structure is related to that of new fluorine ferroelectrics i.e. SrAlF_5 and $\text{Pb}_5\text{Cr}_3\text{F}_{19}$ [1, 2]. The possible existence of a ferroelectric phase transition have been discussed as a function of crystallographic data.

1 - J. Ravez, S. C. Abrahams, J. P. Chaminade, A. Simon, J. Grannec and P. Hagemmuller, Ferroelectrics, **38**, 773 (1981).

2 - S. C. Abrahams, J. Albertsson, C. Svensson and J. Ravez, Acta Cryst., **B46**, 497 (1990).