

## Low sintering temperature of MgTiO<sub>3</sub> with fluorine containing additives for type I capacitors

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**Abstract:** Magnesium titanate MgTiO<sub>3</sub> is a well known compound for type I multilayer ceramic capacitors. Nevertheless the sintering temperature of the pure ilmenite MgTiO<sub>3</sub> is around 1350°C. Such a high sintering temperature together with the high sensitivity of the dielectric material to reduction when heated in a low-oxygen containing atmosphere involve that MgTiO<sub>3</sub>-based MLCC include palladium-rich inner electrodes. The high level of variation of both the costs of Pd and Ag justifies researches leading to the use of cheaper metals such as silver or base metals such as nickel or copper. When using low-melting temperature metals (silver melts at 960°C and copper at 1085°C), the sintering temperature of the dielectric material has to be lowered. We report here on our investigations on the use of fluorine containing additives for the reducing of the sintering temperature of magnesium titanate, showing so the ability of this material to be sintered at temperatures much lower than 1000°C. Both dielectric and electric properties of such ceramics are compatible with type I capacitors requirements.