



Presentation of the CEN TC 352 Technical Specification on identification of food additives by spICP-MS and EM-EDX



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TOPIC / ABSTRACT

Nanotechnologies are used in the food sector, particularly through certain inorganic additives. Characterizing them within complex food matrices poses a major challenge for manufacturers, testing laboratories, and authorities seeking to comply with European regulatory requirements.

The recently published technical specification XP CEN/TS 18267* provides guidance to the food industry, service providers and control laboratories on methodologies to be used for sample preparation, detection, identification and measurement of nano objects in inorganic food additives incorporated in food matrices. Electron microscopy combined with energy dispersive X-ray spectroscopy (EM-EDX) and inductively coupled plasma mass spectrometry (ICP-MS) operated in single particle mode (spICP-MS) are the selected measurement methodologies to provide information on (i) the chemical composition and (ii) number-based particle size distribution of the nano-objects. Special attention is given to the sample preparation, including matrix digestion, sample extraction and dilution steps to be used according to the combination of (i) the chemical nature of the food additive, (ii) the type of food matrix and (iii) the analytical technique of choice (EM-EDX or spICP-MS).

The sample preparation protocols described are tailored to various matrices—a step that is often overlooked yet essential for obtaining reliable, repeatable results. The guidelines are based on case studies involving additives currently on the market.

*[*XP CEN/TS 18267 "Nanotechnologies - Guidelines for sample preparation, detection, identification and characterization by spICP-MS and EM-EDX of nano-objects in inorganic additives incorporated in food matrices"](#)*



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