

[News story: CEN updates affecting chemical measurements May 2018](#)

Food

Natamycin (E235) is a polyene antibiotic of the polyene macrolide group used in the food industry as an antifungal preservative for cheeses and sausages. Natamycin is believed to be effective by binding to ergosterol in the fungal cell membrane which limits fungal growth.

[Regulation \(EU\) 2015/647](#) amended Annexes II and III to Regulation (EC) No 1333/2008 regarding the use of certain food additives and specifies that natamycin may only be used for the surface treatment of uncut hard, semi-hard and semi-soft cheese having a maximum surface concentration of 1 mg/dm² (not present at a depth of 5 mm).

There were two revised EN ISO standards published in May 2018 describing the determination of natamycin in cheese rind:

[EN ISO 9233-1:2018](#) – Cheese, cheese rind and processed cheese – Determination of natamycin content – Part 1: Molecular absorption spectrometric method for cheese rind (ISO 9233-1:2018)

EN ISO 9233-1:2018 supersedes EN ISO 9233-1:2013 describing a method for the determination of the natamycin mass fraction in cheese rind and the natamycin content in the surface-area in cheese rind using molecular spectrometry.

The method takes a weighed sample of the cheese and dissolving in a methanol/water mixture. The fat from the cheese in solution is precipitated by cooling the methanol/water mixture and the precipitate is removed by filtration. The natamycin in the filtrate can then be determined using molecular spectrometry for the natamycin mass fraction above 0.5 mg/kg in cheese rind and the surface-area related natamycin mass in cheese rind content above 0.03 mg/dm².

[EN ISO 9233-2:2018](#) – Cheese, cheese rind and processed cheese – Determination of natamycin content – Part 2: High-performance liquid chromatographic method for cheese, cheese rind and processed cheese (ISO 9233-2:2018)

EN ISO 9233-2:2018 supersedes EN ISO 9233-2:2013 describing a method for the determination of the natamycin mass fraction in cheese, cheese rind and processed cheese as well as the natamycin content in the surface-area of cheese rind using high performance liquid chromatography coupled to an ultraviolet-visible (HPLC-UV) spectrometer detector.

The method takes a weighed sample of the cheese and dissolving in a methanol/water mixture. The fat from the cheese in solution is precipitated by cooling the methanol/water mixture and the precipitate is removed by filtration. The natamycin in the filtrate can then be determined using HPLC-

UV for the natamycin mass fraction above 0.5 mg/kg in cheese, cheese rind and processed cheese and the surface-area related natamycin mass in cheese rind content above 0.03 mg/dm².

[EN 15662:2018](#) – Foods of plant origin – Multi-method for the determination of pesticide residues using GC- and LC-based analysis following acetonitrile extraction/partitioning and clean-up by dispersive SPE – Modular QuEChERS-method

EN 15662:2018 supersedes EN 15662:2008 and describes a method for the analysis of pesticide residues in foods of plant origin, such as fruits (including dried fruits), vegetables, cereals and processed products using gas chromatography coupled to a mass spectrometer detector (GC-MS) or coupled to two mass spectrometers in tandem (GC-MS/MS) and/or liquid chromatography coupled to two mass spectrometers in tandem (LC-MS/MS).

The method applies the Quick, Easy, Cheap, Effective, Rugged, and Safe (QuEChERS) modular approach. The food is shaken in acetonitrile solvent with a small quantity of water to extract the pesticide residue. The acetonitrile/water extract is separated from the food by partition using buffering salts. The acetonitrile/water extract requires further clean-up to enable injection onto a gas or liquid chromatography system and this is done by adding bulk sorbents to absorb impurities and magnesium sulphate to absorb water in a process known as dispersive solid phase extraction (D-SPE). The use of an internal standard allows quantification of the pesticide residue and it is added to the extract after the initial addition of acetonitrile.

Further information on food legislation can be found on the Government Chemist website:

[Food and feed law: Compendium of UK food and feed legislation with associated context and changes during October to December 2017 – Government Chemist Programme Report](#)