

Detection of nitrite in cured meat with QUANTOFIX® Nitrate/Nitrite

Background



Many meat products like ham and smoked pork chop are cured. Curing is a process to preserve meat and sausages by addition of common salt. The meat develops a typical curing taste and becomes red in colour. This process is important to avoid a grey colouration and a growth of microorganisms. However, by the reaction of nitrite with amino acids, carcinogenic nitrosamines might be formed. Therefore, it is important to minimize the concentration of nitrite in meat. A constant control of the concentration of nitrite in meat is necessary to avoid risks. The German directive "zweite Verordnung zur Änderung der Zusatzstoff-Zulassungsverordnung und anderer lebensmittelrechtlicher Verordnungen" (concerns approval of additives in food) defines limit values for the permitted concentration of nitrite in food. For meat products a maximum quantity of 150mg/kg is prescribed. Sterilized meat products are not allowed to exceed the maximum quantity of 100mg/kg.

Test procedure

Sample preparation:

Take 5g meat of the sample and give it into a mortar. Mince the meat and add 8ml sodium acetate solution¹⁾ (13.6g sodium acetate in 100ml distilled water). Mix for 1 minute. Afterwards filter through a soft filter and press slightly to get some filtrate. Filter paper such as our Grade 1288¹⁾ is most suitable for the filtration.



Put 5g meat into a mortar and mince



Add 8ml 1N sodium acetate solution¹⁾ and mix for 1 minute



Filter through a soft filter paper

Testing:

Dip the test strip into the filtrate for a few seconds. Remove the test strip and wait for 30 seconds. Compare the test field with the colour scale on the tube. A red-violet coloration indicates the presence of nitrite ions.



Dip the test strip into the filtrate



Compare the test field with the colour scale



A red-violet coloration detects nitrite ions

Product data and ordering information: QUANTOFIX® Nitrate/Nitrite

Part No.	MN91313
Price	£24.50 (ex VAT) per 100 test strips
Colour reaction	white to red-violet
Limit of sensitivity	0-10-25-50-100-250-500 mg/l NO ₃ ⁻ 0-1-5-10-20-40-80 mg/l NO ₂ ⁻

¹⁾ not provided with the test