N-nitrosamines in food

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European Commission recommends that food businesses and competent authorities in exporting countries should regularly monitor the presence of N-nitrosamines in cured meat and fish; processed vegetables and cereals; milk and dairy products; fermented, pickled, and spiced foods; and alcoholic drinks

Commission Recommendation (EU) 2026/2329 of 21 October 2026 on monitoring the presence of N-nitrosamines in food

Update

The European Commission has published a Recommendation that European Union (EU) authorities and food business operators should monitor N-nitrosamines in food. The European Food Safety Authority has identified the presence of these substances in foods as a potential health concern. However, more data is needed, particularly on the presence of N-nitrosamines in processed meats, alcoholic beverages, processed vegetables and cereals, milk and dairy products, and fermented, pickled, and spiced foods. This data will help the EU to identify measures that can reduce this risk.

Impacted products

Cured meats, processed fish, alcoholic beverages. processed vegetables, processed cereals, milk and dairy products, fermented foods, pickled foods, spiced foods

What is changing?

The European Commission is calling on EU Member States, in cooperation with the food industry, to monitor the presence of N-nitrosamines in food (Recommendation 2026/2329).

Monitoring of N-nitrosamines, or at least the 10 carcinogenic N-nitrosamines identified by EFSA, is recommended for the following food categories:

- cured meat products and processed fish
- alcoholic beverages
- processed vegetables and cereals
- milk and dairy products

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- fermented, pickled, and spiced foods.

Details on the analysis of N-nitrosamines can be found in the Background section below.

Factors that contribute to high N-nitrosamine levels should also be identified, with a view to developing measures that prevent or reduce contamination.

Monitoring results should be submitted to the European Food Safety Authority (EFSA) by Member State authorities and the food industry. This should include information on whether nitrates (E251–E252) or nitrites (E249–E250) were used as additives in processed meats and other processed foods.

This Recommendation does not establish new legal maximum levels for N-nitrosamines in food.

Why?

N-nitrosamines are chemical contaminants that can form during food processing and preparation. EFSA (2023) assessed the risks associated with ten carcinogenic N-nitrosamines (TCNAs) known to occur in food, and concluded that dietary exposure to these substances raises health concerns.

Timeline

EU Member States and the food industry should regularly submit monitoring data to EFSA (see the EFSA webpage Data collection: chemical monitoring).

What are the major implications for exporting countries?

This Recommendation does not introduce new mandatory requirements for food exported to the EU. However, it signals increased EU attention to the problem of N-nitrosamine contamination, particularly in processed foods.

Exporters of processed meat, fish, vegetables, cereals, dairy products, alcoholic beverages, and fermented or pickled foods should be aware of this initiative, as monitoring may lead to new EU rules in the future.

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Recommended Actions

Food businesses and competent authorities in exporting countries may wish to review processing practices, particularly the use of nitrates and nitrites, and identify conditions that could contribute to N-nitrosamine formation. Following the developments in EU monitoring and risk assessments will help exporters to anticipate potential future regulatory changes.

Background

The ten carcinogenic N-nitrosamines (TCNAs) identified by EFSA that are known to occur in food are: nitrosodimethylamine (NDMA), N-nitrosomethylethylamine (NMEA), N-nitrosodiethylamine (NDEA), N-nitrosodipropylamine (NDPA), N-nitrosodibutylamine (NDBA), N-nitrosomethylaniline (NMA), N-nitrososarcosine (NSAR), N-nitrosomorpholine (NMOR), N-nitrosopiperidine (NPIP) and N-nitrosopyrrolidine (NPYR).

Information on analysis

To analyse the presence of N-nitrosamines, the European Commission recommends using liquid or gas chromatography coupled with tandem mass spectrometry. The limit of quantification (LOQ) should be below 1 µg/kg for each of the TCNAs, and no higher than 5 µg/kg for other N-nitrosamines. The one exception is NSAR, for which the LOQ should be as low as possible.

Resources

EFSA (2023) Risk assessment of *N*-nitrosamines in food. EFSA Journal, 21(3): 7884.

Sources

Commission Recommendation (EU) 2026/2329 on monitoring the presence of N-nitrosamines in food

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