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Nestlé Quality Assurance Center
Dublin

Technical Datasheet

Analysis Name: Furan and Alkylfurans in Food by GC-MS

Method Number: LI-00.370

Scope of Application: Baby foods in jar, beverages, infant cereals, infant formula and roasted coffee. Additional matrix types may be analyzed; however, if they do not meet the acceptance criteria established by the matrices that are validated then the matrix will be considered not compatible with this method or an increased quantitation limit may be reported.

Description: An in-house method for the quantitative determination of furan and five alkylfurans by headspace gas chromatography mass spectrometry (GC-MS/HS). The procedure encompasses an extraction assisted with sodium chloride into the headspace over 20 minutes at 50°C. A fixed volume of the resulting headspace is injected. After GC separation the data are acquired on a single quadrupole mass spectrometer operated in selected ion monitoring mode with an electron ionization source. Quantitation is performed via external calibration and an internal standard (IS). The limit of quantitation (LOQ) for each analyte may vary based on matrix type.

Sample Weight Required: 50 g or full product provided (e.g. unopened glass jar). Original finished product packaging is preferred. Sample must be stored in a sealed container. Portion received for analysis must be representative of entire sample.

Analytical Platform: GC-MS/HS

Baby Foods in Jar, Beverages, Fruit Purees (high water content)		
Analyte Reported	Unit of Measure	Range of Quantification
Furan	µg/kg	5.0 – 300
2-Methylfuran	µg/kg	5.0 – 300
3-Methylfuran	µg/kg	5.0 – 300
2-Ethylfuran	µg/kg	5.0 – 300
2,5-Dimethylfuran	µg/kg	5.0 – 300



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Infant Cereals and Infant Formula (dry foods)		
Analyte Reported	Unit of Measure	Range of Quantification
Furan	µg/kg	5.0 – 150
2-Methylfuran	µg/kg	5.0 – 150
3-Methylfuran	µg/kg	5.0 – 150
2-Ethylfuran	µg/kg	5.0 – 150
2,5-Dimethylfuran	µg/kg	5.0 – 150

Roasted Coffee		
Analyte Reported	Unit of Measure	Range of Quantification
Furan	µg/kg	200 – 16,000
2-Methylfuran	µg/kg	200 – 16,000
3-Methylfuran	µg/kg	200 – 16,000
2-Ethylfuran	µg/kg	200 – 16,000
2,5-Dimethylfuran	µg/kg	200 – 16,000