FDA Foods Program Compendium of Analytical Laboratory Methods: Chemical Analytical Manual (CAM)

METHOD NUMBER: C-006.01

POSTING DATE: September 23, 2019

POSTING EXPIRATION DATE: None

PROGRAM AREA: Toxic and Nutrient Elements

METHOD TITLE: EAM 4.10 High Performance Liquid Chromatography-Inductively Coupled Plasma-Mass Spectrometric Determination of Four Arsenic Species in Fruit Juice (follow link for method write-up; see also FDA Elemental Analysis Manual).

VALIDATION STATUS: Level 3 Multi-laboratory Validated (MLV) under Foods Program Method Development, Validation and Implementation Program

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METHOD SUMMARY/SCOPE:

Analyte(s): Arsenite, Arsenate, Monomethylarsonic acid (MMA), Dimethylarsinic acid (DMA)

Matrices: Clear fruit juice and fruit juice concentrates

This method describes a procedure for using high performance liquid chromatography (HPLC) in combination with inductively coupled plasma-mass spectrometry (ICP-MS) to determine inorganic arsenic (iAs, the sum of arsenite, As(III) and arsenate, As(V)) in clear (free of solids) fruit juice and fruit juice concentrates. Dimethylarsinic acid (DMA) and monomethylarsonic acid (MMA) are also determined with this method. A solution containing arsenobetaine (AsB) and As(III) is analyzed to demonstrate adequate separation between unretained arsenic-containing species and As(III). Other matrices may be analyzed by this procedure if performance is verified in the matrix of interest and at the concentration of interest.

REVISION HISTORY:

OTHER NOTES: