PRODUCT INFORMATION SHEET

Minerals, Trace Elements and Heavy Metals in Infant Food

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA ptSU08 (2023) – Minerals, Trace Elements and Heavy Metals in Infant Food*
Identifier / LOT	*RM 2023-SU08*
Expiry date	*December 2024*
Matrix	*Infant Food*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 8 g*
Storage conditions	*room temperature (dry and dark)*
Name and address manufacturer	***DLA - Proficiency Tests GmbH*** *Hauptstr. 80, 23845 Oering, Germany* *Tel. ++49-(0)4532-9183358, Fax. ++49(0)4102-9944976* *eMail. pt@dla-lvu.de, website. www.dla-lvu.de*

Composition of Material

Ingredients	**Content**
Infant Food Powder, organic (Follow-on Milk from 6th month) Ingredients: Skimmed milk powder, vegetable oils, whey product, maltodextrin, starch and food additives (minerals & vitamins) Nutrients per 100 g powder: Fat 24 g, carbohydrates 59 g therof sugar 27 g, fiber 0 g, protein 11 g, salt 0,6 g	50,0 g/100 g
Infant Food Powder (Pre-formula from birth) Ingredients: Whey product, skimmed milk powder, vegetable oils and fat, lactose, fish oil and food additives (e.g. minerals & vitamins, amino acids, acidity regulators, lactic acid bacteria) Nutrients per 100 g powder: Fat 30 g, carbohydrates 58 g therof sugar 58 g, protein 9,3 g, salt 0,3 g	50,0 g/100 g
Al - Aluminium (standard solution)	6,0 mg/kg *
As - Arsenic (standard solution)	0,060 mg/kg *
Ba - Barium (standard solution)	0,30 mg/kg *
Cd - Cadmium (standard solution)	0,030 mg/kg *
Cr - Chromium (standard solution)	1,0 mg/kg *
Hg - Mercury (standard solution)	0,10 mg/kg *
Ni - Nickel (standard solution)	0,70 mg/kg *
Pb - Lead (standard solution)	0,12 mg/kg *

** additional "natural" amounts can be present in the food matrix*

Note: *The metrological traceability of temperature, mass and volume during production of the PT samples is ensured by DAkkS-compliant calibrated reference materials.*

Minimum Sample Size
A minimum sample size of 5 g is recommended for sample preparation.

The calculation of the repeatability standard deviations S_r of the participants was used as an indicator of homogeneity. For all parameters, the repeatability standard deviation was < 4,6%. Thus, they were similar to corresponding repeatability standard deviations of precision data of the standardized methods (e.g. ASU §64 / EN standard methods) (for more details see final report of PT).

Reference Values
All reference values were derived from the related PT round (for more details see final report).

Reference Values quantitative in mg/kg

Parameter	Al – Aluminium (Info*)	As – Arsenic (Info*)	Ba – Barium (Info*)
Numbers of results°	4	3	2
Number of outliers	0	0	0
Assigned Value (Xpt)	***6,91***	***0,0728***	***0,375***
Robust standard deviation	0,333	0,0100	0,01
Standard uncertainty	0,208	0,00723	-
Target standard deviation σpt	0,826	0,0160	-
Target range	***5,26 – 8,56***	***0,0408 – 0,105***	***-***

*Due to the number of results <5 for information only

Parameter	Ca - Calcium	Cd – Cadmium (Info*)	Cr - Chromium
Numbers of results	9	4	9
Number of outliers	0	0	0
Assigned Value (Xpt)	***3957***	***0,0313***	***1,17***
Robust standard deviation	143	0,00109	0,102
Standard uncertainty	59,4	0,000679	0,0427
Target standard deviation σpt	182	0,00688	0,183
Target range	***3593 - 4321***	***0,0175 – 0,0450***	***0,806 – 1,54***

* Due to the number of results <5 for information only

Parameter	Cu - Copper	Fe - Iron	Hg – Mercury (Info*)
Numbers of results	8	9	4
Number of outliers	0	0	0
Assigned Value (Xpt)	***3,94***	***49,6***	***0,0975***
Robust standard deviation	0,284	2,03	0,00918
Standard uncertainty	0,126	0,845	0,00574
Target standard deviation σpt	0,513	4,41	0,0214
Target range	***2,91 – 4,96***	***40,8 – 58,4***	***0,0546 – 0,140***

* Due to the number of results <5 for information only

Parameter	I – Iodine (Info*)	K - Potassium	Mg - Magnesium
Numbers of results	3	8	9
Number of outliers	0	0	0
Assigned Value (Xpt)	***1,08***	***5543***	***456***
Robust standard deviation	0,0948	371	23,8
Standard uncertainty	0,0684	164	9,92
Target standard deviation σpt	0,171	400	29,0
Target range	***0,742 – 1,43***	***4744 - 6342***	***398 - 514***

* Due to the number of results <5 for information only

Parameter	Mn - Manganese	Na - Sodium	Ni – Nickel (Info*)
Numbers of results	8	7	4
Number of outliers	0	0	0
Assigned Value (Xpt)	***1,78***	***1703***	***0,792***
Robust standard deviation	0,0764	157	0,0635
Standard uncertainty	0,0338	74,1	0,0397
Target standard deviation σpt	0,261	105	0,131
Target range	***1,26 – 2,30***	***1493 - 1913***	***0,529 – 1,05***

* Due to the number of results <5 for information only

Parameter	P - Phosphorus	Pb – Lead (Info*)	S – Sulphur (Info*)
Numbers of results	9	4	2
Number of outliers	0	0	0
Assigned Value (Xpt)	***2307***	***0,125***	***1243***
Robust standard deviation	154	0,0147	44,9
Standard uncertainty	64,3	0,00917	-
Target standard deviation σpt	156	0,0274	-
Target range	***1995 - 2619***	***0,0703 – 0,180***	***-***

* Due to the number of results <5 for information only

Parameter	Se - Selenium	Zn - Zinc
Numbers of results	6	8
Number of outliers	0	0
Assigned Value (Xpt)	***0,258***	***45,9***
Robust standard deviation	0,0470	2,06
Standard uncertainty	0,0240	0,911
Target standard deviation σpt	0,0506	4,13
Target range	***0,157 – 0,359***	***37,6 – 54,2***

* Due to the number of results <5 for information only

Intended Use

- for laboratory use only, no food!
- validation of analytical methods
- control sample for quality control charts
- test material for inter-laboratory comparisons
- no medical use

Storage Instructions and Handling Information

The material should be stored as stated on page 1. Before use of the material should be warmed up to room temperature. The content should be mixed thoroughly prior to subsampling (see minimum sample size above). The material should be weighed immediately after opening of the foil pouche/bottle and closed again afterwards in order to avoid uptake of moisture. Frequent freezing and thawing should be avoided as this can lead to changes in the properties of the material. The expiry date of this RM is based on the current knowledge and applies only for proper storage conditions in the originally closed foil pouche/bottle.

Safety Precautions

The usual laboratory safety precautions should be applied when working with the RM considering the type of ingredients, parameters and its concentration.

Data Source

The material was analyzed by 9 laboratories within the related proficiency test (PT). Different analytical methods have been used.

Various
The user must determine the suitability of this RM for its particular purpose. DLA makes no warranty of any kind, expressed or implied, other than its products meet all quality control standards set by DLA. We do not guarantee this product can be used for a special application.

Datum / Date: 4 June 2024

Matthias Besler-Scharf, PhD (EP-Koordintaor / PT-Coordinator)
- gezeichnet / signed M. Besler-Scharf

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