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 (2022) Minerals, Trace Elements and Heavy Metals in Infant Food*
Identifier / LOT	*RM 2022-SU08*
Expiry date	*May 2027*
Matrix	*Infant Food*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 8 g*
Storage conditions	*room temperature, long term 2 - 10°C (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	**Amounts**
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)	4,0 mg/kg *
As - Arsenic (standard solution)	0,17 mg/kg *
Cd - Cadmium (standard solution)	0,060 mg/kg *
Cr - Chromium (standard solution)	0,80 mg/kg *
Hg - Mercury (standard solution)	0,26 mg/kg *
Ni - Nickel (standard solution)	0,50 mg/kg *
Pb - Lead (standard solution)	0,15 mg/kg *

* additional “natural” amounts can be present in the food matrix

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. The coefficient of variation (CV_r) for all analytes ranges from 0,92 – 7,9%. Thus, they were similar to the repeatability standard deviations of the corresponding official methods (e.g. ASU §64 / ICP-OES / GF-AAS / CV-AAS / AAS / ICP-MS).

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	As - Arsenic	Ba - Barium
Numbers of results°	7	6	6
Number of outliers	-	-	0
Assigned Value (Xpt)	***4,57***	***0,191***	***0,147***
Robust standard deviation	1,25	0,0189	0,0118
Standard uncertainty	0,590	0,00962	0,00602
Target standard deviation σpt	0,829	0,0392	0,0314
Target range	***2,91 - 6,23***	***0,113 - 0,269***	***0,0841 - 0,210***

° without outliers

Parameter	Ca - Calcium	Cd - Cadmium	Cr - Chromium
Numbers of results°	8	8	9
Number of outliers	-	0	-
Assigned Value (Xpt)	***4216***	***0,0587***	***0,914***
Robust standard deviation	243	0,00940	0,0832
Standard uncertainty	108	0,00415	0,0347
Target standard deviation σpt	320	0,0144	0,148
Target range	***3575 - 4856***	***0,0299 - 0,0875***	***0,617 - 1,21***

° without outliers

Parameter	Cu - Copper	Fe - Iron	Hg - Mercury
Numbers of results°	9	9	7
Number of outliers	-	-	-
Assigned Value (Xpt)	***3,18***	***51,7***	***0,266***
Robust standard deviation	0,437	4,29	0,0381
Standard uncertainty	0,182	1,79	0,0180
Target standard deviation σpt	0,428	4,56	0,0519
Target range	***2,33 - 4,04***	***42,5 - 60,8***	***0,162 - 0,369***

° without outliers

Parameter	K - Potassium	Mg - Magnesium	Mn - Manganese
Numbers of results°	7	8	9
Number of outliers	-	-	0
Assigned Value (Xpt)	***5023***	***452***	***1,01***
Robust standard deviation	655	32,3	0,111
Standard uncertainty	309	14,3	0,0463
Target standard deviation σpt	388	31,7	0,161
Target range	***4247 - 5799***	***389 - 516***	***0,687 - 1,33***

° without outliers

Parameter	Na - Sodium	Ni - Nickel	P - Phosphorus
Numbers of results°	7	6	7
Number of outliers	-	0	-
Assigned Value (Xpt)	***1687***	***0,583***	***2656***
Robust standard deviation	271	0,0666	119
Standard uncertainty	128	0,0340	56,3
Target standard deviation σpt	155	0,101	199
Target range	***1376 - 1998***	***0,381 - 0,786***	***2259 - 3054***

° without outliers

Parameter	Pb - Lead	Se - Selenium	Zn - Zinc
Numbers of results°	8	6	9
Number of outliers	0	0	-
Assigned Value (Xpt)	***0,160***	***0,189***	***46,2***
Robust standard deviation	0,0328	0,0556	4,57
Standard uncertainty	0,0145	0,0284	1,90
Target standard deviation σpt	0,0338	0,0388	4,15
Target range	***0,0926 - 0,228***	***0,111 - 0,266***	***37,9 - 54,5***

° without outliers

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.

DLA Proficiency Tests

approved (PT-Coordinator)	updated
Matthias Besler-Scharf, PhD	Ulrike Vorreiter
signed M. Besler-Scharf	*signed U. Vorreiter*
2 September 2022	28 May 2026