# PRODUCT INFORMATION SHEET

## *B, Ca, Cr, Cu, Fe, K, Mg, Mn, Mo, P, Se, Zn and TiO2 in Capsule Powder*

*PT originated REFERENCE MATERIAL (RM)*

**Description of the RM**

| | |
|---|---|
| Name / Material of related PT | *DLA ptSU3 (2025) – Food Supplements III: B, Ca, Cr, Cu, Fe, K, Mg, Mn, Mo, P, Se, Zn and TiO2 in Capsule Powder* |
| Identifier / LOT | *RM 2025-SU03* |
| Expiry date | *December 2026* |
| Matrix | *Capsule Powder* |
| Physical description | *Powder* |
| Packaging / weight | *Sealed foil pouche / 50 g* |
| Storage conditions | *room temperature (dry and dark)* |
| Name and address manufacturer | ***DLA - Proficiency Tests GmbH***<br>*Hauptstr. 80, 23845 Oering, Germany*<br>*Tel. ++49-(0)4532-9183358, Fax. ++49(0)4102-9944976*<br>*eMail. pt@dla-lvu.de, website. www.dla-lvu.de* |

**Composition of Material**

**Multi-Mineral-Powder (capsules, tablets and premixes)**

Mineral complex (1. food supplement, capsules)
Ingredients: Magnesium glycerophosphate, silica, ferrous fumarate, zinc bisglycinate, sodium borate, L-selenomethionine, manganese bisglycinate, copper bisglycinate, chromium picolinate, potassium iodide, sodium molybdate.

Calcium (2. food supplement, tablets)
Ingredients: Calcium carbonate

Potassium citrate (3. food supplement, powder)
Ingredients: Potassium citrate

Titanium dioxide (4. additive, powder)
Ingredients: Titanium dioxide ≥98 %

Maltodextrin (5. additive, powder)
Ingredients: Maltodextrin

***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 / Homogeneity**

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

The homogeneity tests were performed with sample sizes of 5 g (Microtracer analysis), respectively.
The mixture homogeneity was examined 10-fold by microtracer analysis. Homogeneity was sufficient with a probability of ≥ 25% (excellent mixture) and a HorRat value in the range of acceptance (0,3 to 1,3).
Furthermore, 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 ≤ 7,6%. Thus, they were similar to corresponding repeatability standard deviations of precision data of the standardized methods (e.g. ASU / BVL methods / EN ISO methods) (for more details see final report).

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

**Reference Values quantitative**

| Parameter | B - Boron | Ca – Calcium | Cr - Chromium |
|---|---|---|---|
| | mg/100g | mg/100g | µg/100g |
| Number of results | 7 | 10° | 8 |
| Number of outliers | 0 | 1 | 0 |
| ***Assigned Value (Xpt)*** | ***217*** | ***1937*** | ***1685*** |
| Robust standard deviation | 21,6 | 110 | 165 |
| Standard uncertainty | 10,2 | 43,5 | 72,8 |
| Target standard deviation σpt | 10,9 | 147 | 176 |
| ***Target range*** | ***195 - 239*** | ***1642 - 2231*** | ***1333 - 2038*** |

° without outliers

| Parameter | Cu - Copper | Fe - Iron | K - Potassium |
|---|---|---|---|
| | mg/100g | mg/100g | mg/100g |
| Number of results | 10 | 10 | 10° |
| Number of outliers | 0 | 0 | 1 |
| ***Assigned Value (Xpt)*** | ***39,2*** | ***528*** | ***2018*** |
| Robust standard deviation | 1,62 | 27,5 | 182 |
| Standard uncertainty | 0,642 | 10,9 | 72,1 |
| Target standard deviation σpt | 2,55 | 35,4 | 94,3 |
| ***Target range*** | ***34,1 – 44,3*** | ***457 - 598*** | ***1830 - 2207*** |

° without outliers

| Parameter | Mg - Magnesium | Mn - Manganese | Mo - Molybdenum |
|---|---|---|---|
| | mg/100g | mg/100g | µg/100g |
| Number of results | 9° | 10 | 8 |
| Number of outliers | 1 | 0 | 0 |
| ***Assigned Value (Xpt)*** | ***1136*** | ***82,1*** | ***1728*** |
| Robust standard deviation | 98,4 | 6,76 | 489 |
| Standard uncertainty | 41,0 | 2,67 | 216 |
| Target standard deviation σpt | 79,6 | 10,9 | 354 |
| ***Target range*** | ***977 - 1295*** | ***60,3 - 104*** | ***1020 - 2436*** |

° without outliers

| Parameter | P - Phosphorus | Se - Selenium | TiO2 – Titanium dioxide (Info)* |
|---|---|---|---|
| | mg/100g | µg/100g | mg/100g |
| Number of results | 7° | 10 | 5 |
| Number of outliers | 1 | 0 | 0 |
| ***Assigned Value (Xpt)*** | ***1513*** | ***2125*** | ***2958*** |
| Robust standard deviation | 79,7 | 203 | 3354 |
| Standard uncertainty | 37,6 | 80,4 | - |
| Target standard deviation σpt | 113 | 215 | - |
| ***Target range*** | ***1286 - 1739*** | ***1696 - 2554*** | ***-*** |

° without outliers
* Info: Due to the small number and heterogeneity of results, the data are purely informative. Z-scores were not calculated.

| Parameter | Zn - Zinc |
|---|---|
| | mg/100g |
| Number of results | 11 |
| Number of outliers | 0 |
| ***Assigned Value (Xpt)*** | ***441*** |
| Robust standard deviation | 29,0 |
| Standard uncertainty | 10,9 |
| Target standard deviation σpt | 29,3 |
| ***Target range*** | ***383 - 500*** |

**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 11 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.

| created | approved (PT-Coordinator) | updated |
|---|---|---|
| Ulrike Vorreiter | Matthias Besler-Scharf, PhD | - |
| *signed U. Vorreiter* | *signed M. Besler-Scharf* | - |
| 9 December 2025 | 13 January 2026 | - |