

PRODUCT INFORMATION SHEET

Gluten, Hazelnut and Pecan in Chocolate (positive)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	<i>DLA ptAL06 (2025) – Allergens VI: Gluten, Hazelnut and Pecan in Chocolate with "Spiking Level Sample" (3 different Samples) – Sample A (positive sample)</i>
Identifier / LOT	<i>RM 2025-AL06 A</i>
Expiry date	<i>January 2027</i>
Matrix	<i>Chocolate</i>
Physical description	<i>Solid</i>
Packaging / weight	<i>Screw-cap jars / 25 g</i>
Storage conditions	<i>2 - 10°C (dry and dark)</i>
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	Sample A present sample	Sample B	Sample SP
Dark chocolates (85% and 70% cocoa content, 1:1 mixture) Ingredients: Cocoa mass, sugar, cocoa butter, de-fatted cocoa, emulsifier: lecithins, vanilla extract other food additives and positive sample: allergenic ingredients as below Nutrients per 100 g: Fat 46 g, Carbohydrates 27 g, Protein 10 g	99,9 g/100 g	100 g/100 g	-
Potato Powder Ingredients: Potatoes, E471, E304, E223, E100	-	-	99,9 g/100 g
Wheat wheat flour , mixture (21 products from Europe, Asia, USA) – as wheat flour* – <i>thereof 10,1% total protein**</i> – <i>thereof gluten***</i>	284 mg/kg 28,7 mg/kg 24,7 mg/kg	-	335 mg/kg 33,8 mg/kg 29,1 mg/kg
Hazelnut roasted, ground , mixture (10 products from 5 countries / Europe) – as hazelnut* – <i>thereof 14,1% total protein**</i>	27,8 mg/kg 3,91 mg/kg	-	27,5 mg/kg 3,87 mg/kg
Pecan ground , mixture (8 products from non-EU countries incl. Mexico and USA) – as pecan* – <i>thereof 9,86% total protein**</i>	41,2 mg/kg 4,06 mg/kg	-	40,9 mg/kg 4,03 mg/kg
further Ingredients: <i>Maltodextrin, sodium sulfate and silicon dioxide</i>	<0,1 g/100 g	-	<0,1 g/100 g

* Allergen contents as "total food" as described in the column ingredients according to the gravimetric mixture

** Protein contents according to laboratory analysis of the raw material (total nitrogen according to Kjeldahl with F=5,7 for wheat protein, F=5,30 for hazelnut protein and pecan protein)

*** Protein contents according to literature values (approx. 8,7% gluten in wheat flour)

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 of the parameters were carried out by ELISA analyzing two subsets from 10 test items (according to ISO 13528:2015 Annex B). Homogeneity was sufficient with a standard deviation between the samples S_s of $\leq 15\%$ („heterogeneity standard deviation“) using ELISA test kits from different manufacturers, e.g. AgraQuant Allergen ELISA Romer Labs, GSD Allergen ELISA Gold Standard Diagnostics Kassel, Morinaga Food Allergen ELISA Kits MloBS, Veratox ELISA for Food Allergens Neogen (for more details see final report of PT).

Reference Values

All reference values were derived from the related ISO 17043 accredited PT round (for more details see final report).

Reference Values quantitative in mg/kg ELISA

Parameter	Gluten	
	All Results*	Method RS**
Number of results	25°	14
Number of outliers	1	-
Assigned Value (Xpt)	25,3	26,3
Robust standard deviation	9,08	10,1
Standard uncertainty	2,27	3,39
Target standard deviation opt	6,32	6,59
Target range	12,6 – 37,9	13,2 – 39,5

* ELISA Method: diverse Methods

** ELISA Method: RS = Ridascreen®, R-Biopharm

° without outlier

Parameter	Hazelnut		
	All Results* (Info)	Method ES**	Method RS-F*** (Info)
Number of results	15°	5	4
Number of outliers	1	-	-
Assigned Value (Xpt)	16	12,7	19,7
Robust standard deviation	4,97	2,83	5,38
Standard uncertainty	1,60	1,58	3,36
Target standard deviation opt	3,99	3,18	4,93
Target range	7,99 – 24,0	6,36 – 19,1	9,86 – 29,6

* ELISA Method: diverse Methods

** ELISA Method: ES = ELISA-Systems

*** RS-F= Ridascreen® Fast, R-Biopharm

° without outlier

(Info): for information only due to likely method differences (all methods) and <5 results (RS-F)

Parameter	Pecan (Info)	
	Results "Peak 18"*	Results "Peak 98"***
Number of results	6°	3
Number of outliers	1	-
Assigned Value (Xpt)	17,9	98,0
Robust standard deviation	8,93	13,1
Standard uncertainty	4,56	8,44
Target standard deviation opt	4,47	24,5
Target range	8,93 – 26,8	49,0 - 147

* ELISA Method: "Peak 18" methods: 3M = 3M Protein ELISA Kit, Neogen, DE = Demeditec ELISA, GSD = ELISA, Gold Standard Diagnostics, Kassel

** ELISA Method: "Peak 98" methods: BF = MonoTrace ELISA, BioFront Technologies, PB = Allergen-Shield ELISA, ProGnosis Biotech

° without outlier / (Info): for information only

Reference Values qualitative ELISA

Parameter	Gluten*	Hazelnut*	Pecan*
Number positive	27	18	12
Number negative	1	1	0
Percent positive	96	95	100
Percent negative	4	5	0
Consensus value	positive	positive	positive

* Results of diverse ELISA Methods (LODs positive results Gluten 0,3-5 mg/kg, Hazelnut 0,04-1 mg/kg, Pecan 0,2-17 mg/kg)

Reference Values qualitative PCR

Parameter	Gluten-containing Cereals (as Wheat)*	Hazelnut*	Pecan*
Number positive	5	8	8
Number negative	0	0	0
Percent positive	100	100	100
Percent negative	0	0	0
Consensus value	positive	positive	positive

* Results of diverse PCR Methods (LODs positive results Gluten-containing Cereals (as Wheat) 5,0 mg/kg, Hazelnut 0,4-10 mg/kg, Pecan 0,4-10 mg/kg)

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 poche/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 poche/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 27 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
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<i>signed U. Vorreiter</i>	<i>signed M. Besler-Scharf</i>	-
27 January 2026	6 February 2026	-