

ANALYTICAL CERTIFICATE

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Sample name	Ipamorelin
Batch No.	2024197
Sample No.	01
Sequence	Aib-His-D-2Nal-D-Phe-Lys-NH ₂
Manufacturing date	NA
Submitter of analytical request	Particle s.r.o., Slovakia

1. Peptide content by HPLC/CLND:

1.1 HPLC Instrument:

Pump: Agilent 1200 Series, Quat Pump G1311A
Sampler: Agilent 1260 Series, Hip ALS G1367E
Degasser: Agilent 1200 Series, Degasser G1379B
Detectors: Agilent 1200 Series, VWD G1314B
Nitrogen detector Antek 8060

1.2 HPLC conditions:

Eluents: A – MilliQ water
B – isopropanol
D – 1% TFA in MilliQ water
Flow rate: 1 mL/min
Gradient:

Time	A (%)	B (%)	D (%)
0	90	0	10
1	90	0	10
9	10	80	10
10	10	80	10
11	90	0	10
15	90	0	10

Column: ARION 5 μ C4-BIO 300 A, 4.6 x 100 mm
Serial No 221258

1.3 Sample preparation:

The whole amount of Ipamorelin (5 mg) was dissolved in 1 mL of DMSO.
Injection: 2 μ L

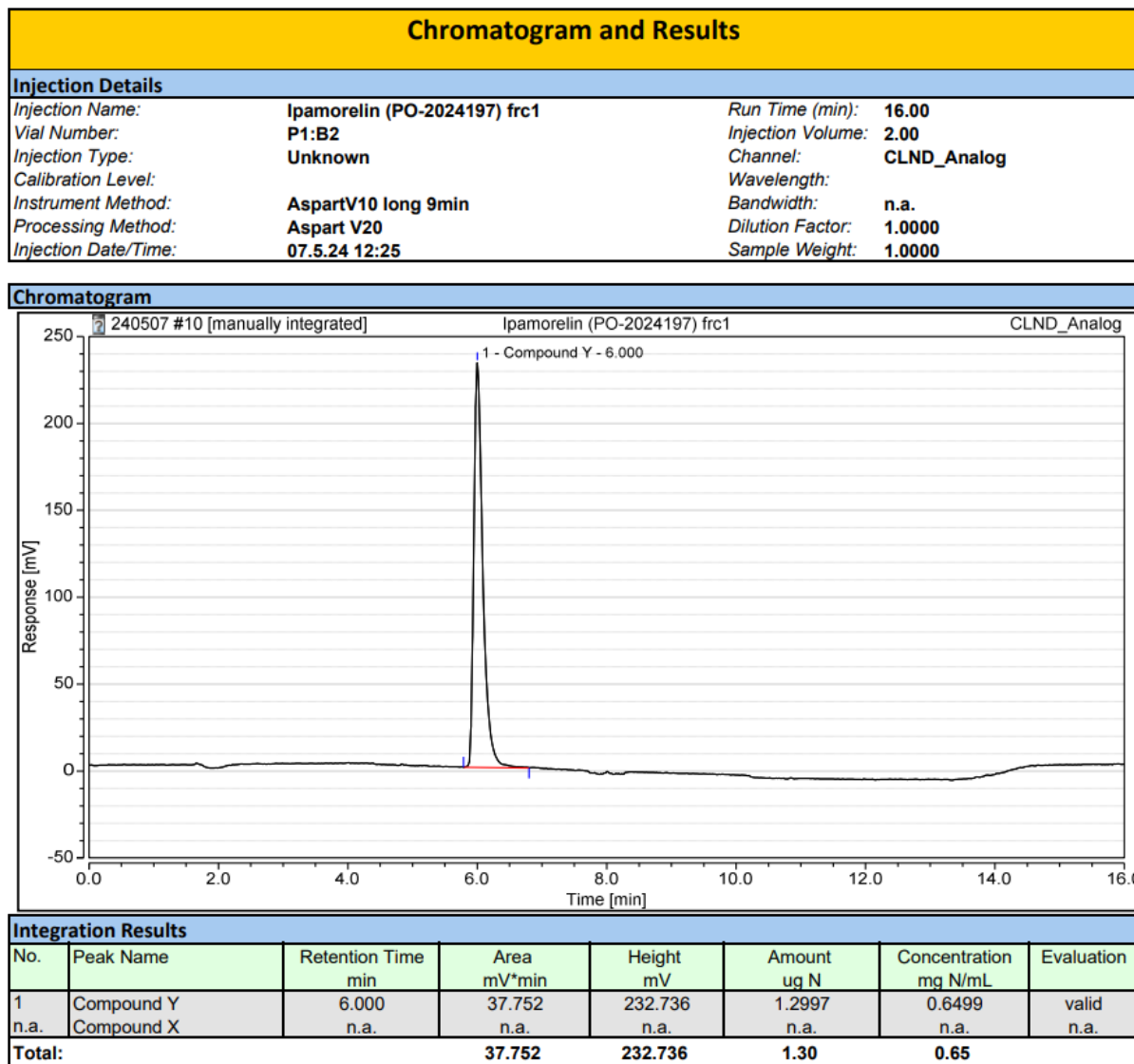
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1.4 Chromatograms and calibration curve:

Instrument:CLND-2 Sequence:240507

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Instrument:CLND-2 Sequence:240507

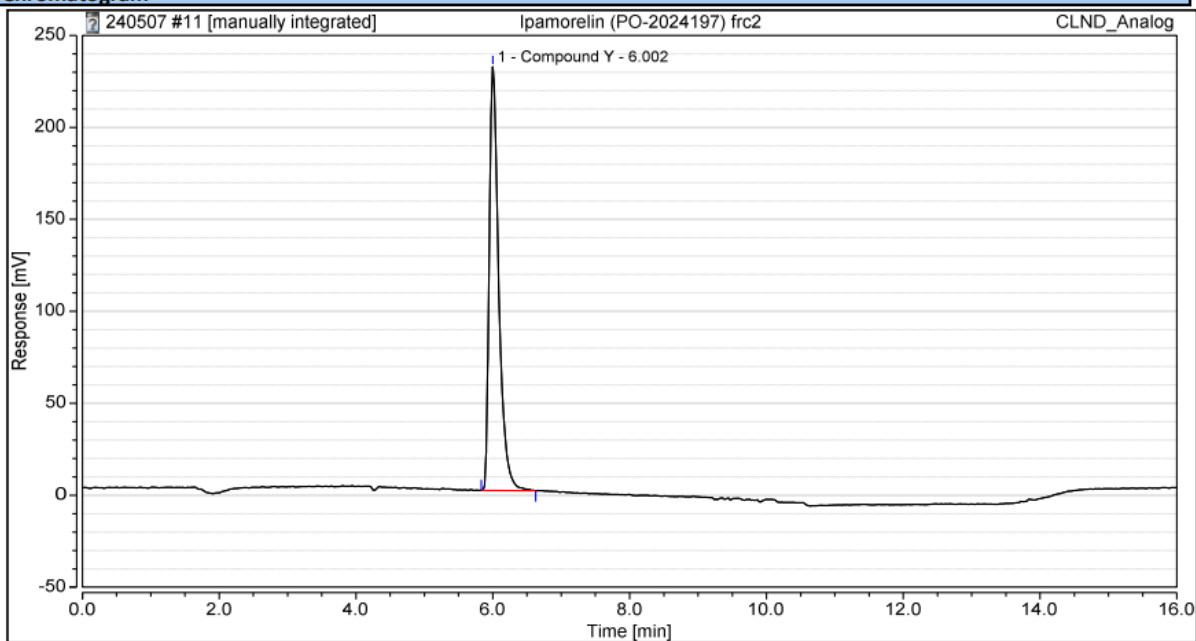
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Chromatogram and Results

Injection Details

Injection Name:	Ipamorelin (PO-2024197) frc2	Run Time (min):	16.00
Vial Number:	P1:B2	Injection Volume:	2.00
Injection Type:	Unknown	Channel:	CLND_Analog
Calibration Level:		Wavelength:	
Instrument Method:	AspartV10 long 9min	Bandwidth:	n.a.
Processing Method:	Aspart V20	Dilution Factor:	1.0000
Injection Date/Time:	07.5.24 12:42	Sample Weight:	1.0000

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mV*min	Height mV	Amount ug N	Concentration mg N/mL	Evaluation
1	Compound Y	6.002	37.217	230.470	1.2834	0.6417	valid
n.a.	Compound X	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			37.217	230.470	1.28	0.64	

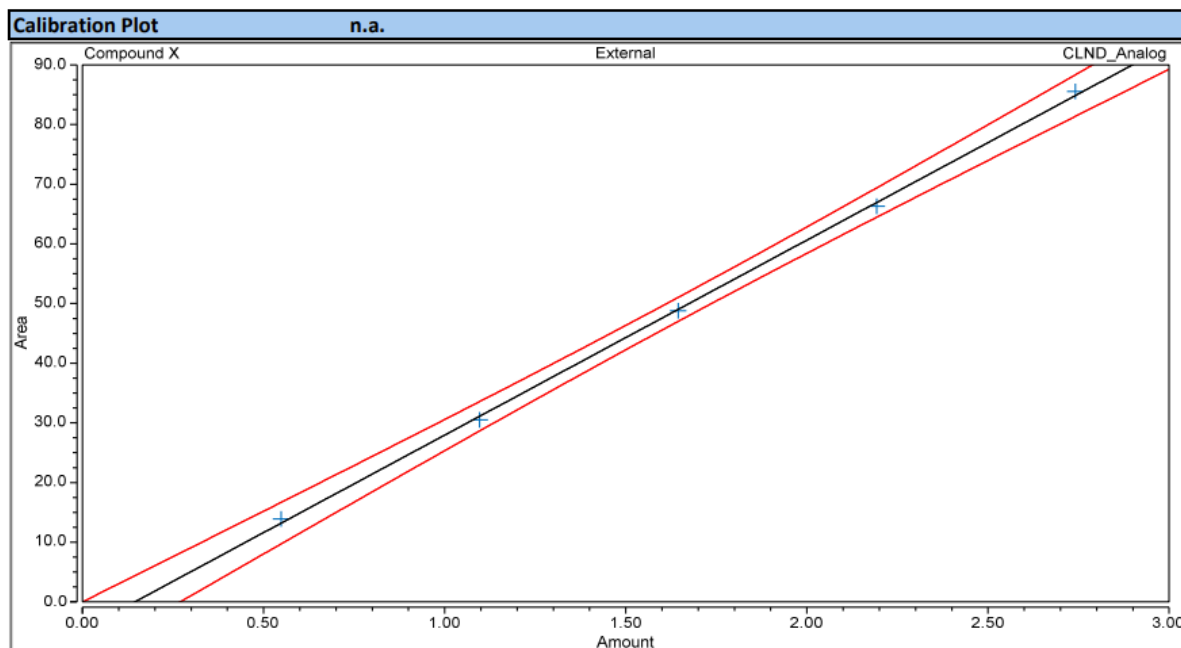
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Instrument: CLND-2 Sequence: 240507

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Calibration			
Calibration Details	n.a.		
Calibration Type	Lin, WithOffset	Offset (C0)	n.a.
Evaluation Type	Area	Slope (C1)	n.a.
Number of Calibration Points	n.a.	Curve (C2)	n.a.
Number of disabled Calibration Points	n.a.	R-Square	n.a.



Calibration Results							
n.a.							
No.	Injection Name	Calibration Level	X Value	Y Value	Y Value	Area mV*min	Height mV
			CLND_Analog Compound X	CLND_Analog Compound X	CLND_Analog Compound X	CLND_Analog Compound X	CLND_Analog Compound X
2	Aspart5	1	2.7408	85.5608	85.5608	85.561	499.268
3	Aspart4	1	2.1926	66.3218	66.3218	66.322	390.903
4	Aspart3	1	1.6445	48.7915	48.7915	48.792	281.671
5	Aspart2	1	1.0963	30.5163	30.5163	30.516	178.001
6	Aspart1	1	0.5482	13.8947	13.8947	13.895	80.833

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1.5 Results:

NNC: Ipamorelin (PO-202419		Salt:	0
MW (calculated) g/mol	N content (calculated) %	N conc. (measured) mg × N/ml	
697,84	18,06	0,6458	
Theoretical Volume ml		Lyophilizate amount mg	
1,00		5,00	
Peptide concentration mg/ml nmol/ml		Quantified amount mg nmol	
3,58	5124	3,6	5 124
Peptide content assay %			
71,5			

Summary table:

Peptide	Aliquoting (mg)	Total weight of sample (mg)	Content of the peptide by CLND (mg)	Content of the peptide in the sample (%)	Content of the peptide against the amount on label.
IPAMORELIN	5	NA	3,6	NA	71,5 %

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2. Purity assessment by UPLC:

2.1 HPLC Instrument:

LC-System Waters Acquity UPLC
Detectors: UV or DAD at 214 nm

2.2 HPLC conditions:

Eluents: A – MilliQ water + 0.05% TFA
 B – acetonitrile + 0.05% TFA
Flow rate: 0.45 mL/min
Gradient: from 55, B to 60% B in 4 min, according to chromatogram results
Column: Waters Acquity BEH, C-18, 1.7µm, 2.1mm x 50mm
 Part No 186002353

2.3 Sample preparation:

The whole amount of Ipamorelin (5 mg) was dissolved in 1 mL of DMSO.
Injection: 0,1 µL

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2.4 Chromatogram of Ipamorelin (PO-2024197)

Sample information

UPLC2

Channel Description ACQUITY TUV ChA 214nm

Vial : 1:C,6 Vol. : 0.10 ul

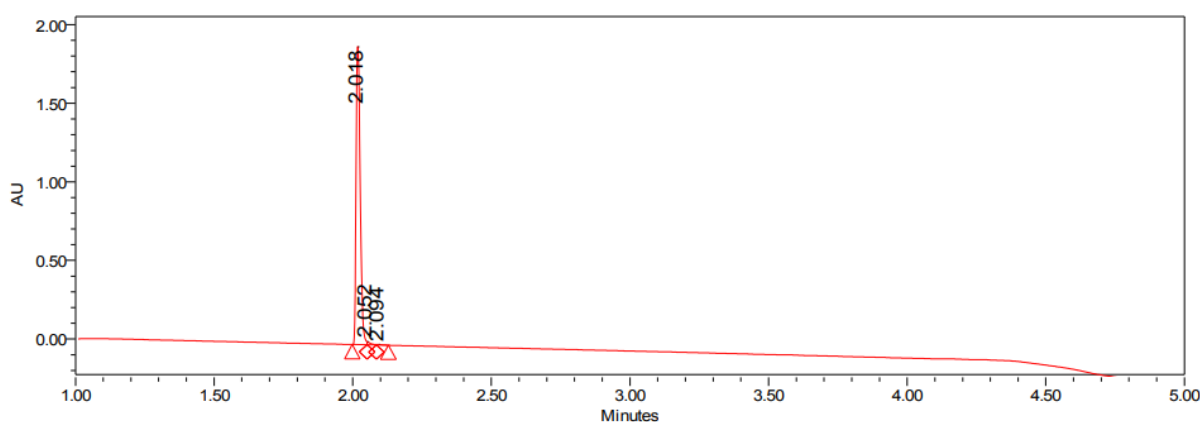
Sample: Ipamorelin (PO-2024197)

Date Acquired 5/7/2024 3:48:58 PM CEST

Date Processed 5/7/2024 4:44:36 PM CEST

Acq Method Set :

Gr_5_60_4mi_40C_0_45_K2_met_s



	RT	Area	Height (μV)	% Area
1	2.018	1980145	1899263	98.91
2	2.052	17426	20259	0.87
3	2.094	4412	3608	0.22

A: 0.05% TFA in water

B: 0.05% TFA in acetonitrile

Gradient :

0.0 - 0.5min 5 - 5 % B

0.5 - 4 min 5 - 60 % B

4.0 - 4.5 min 60 - 100 % B

4.5 - 5.0min 100 % B

5.0 - 5.5min 100 - 5 % B

6min 5 % B

0.45ml/min

Acquity UPLC BEHC18, 1.7μm, 2.1 x 50 mm column
column oven temp. = 40 °C

2.5 Result of purity assessment

The overall purity is 98.91 % at 214 nm.

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CONCLUSION:

The sample Ipamorelin (Batch No. 2024197) was analyzed for peptide content and for UV purity at 214 nm.

Peptide content is 71.5 % (3.6 mg in 5 mg).

Purity is 98.91 % (UPLC at 214 nm).

ANALYSIS COMPLETED:	Date: 07.05.2024
Issued by QC:	Date: 09.05.2024 Signature: 

As of 09-May-2024 10:27 (UTC+02:00) this information pertains to all reports for Eurofins Batch Number: W124AA1668.

Testing for this Batch was performed under the following regulatory guidelines: GMP Commercial.

Sample Number	Sample Description	Included In This Reporting Group	Report Version	Report Revision Log
W124AA1668-1	Ipamorelin (PO-2024197) 5 mg glass vials; 1 Box(es); BPT Received Date 02-May-2024	✓	1	Original Report - Analytical Report ABK13570

Contracted Testing Facility	Testing Performed
<p>Eurofins BioPharma Product Testing Slovakia s.r.o. (Bratislava) Kollárovo nám. 9 Bratislava, 811 07 SK CSPharmaSK@eurofins.sk www.eurofins.sk</p> <p>Questions about this report should be directed to your project manager or the general email listed above.</p>	
Other Eurofins BPT Testing Facilities	Testing Performed
<p>Eurofins BioPharma Product Testing Slovakia s.r.o. (Piešťany) Mudronova 25 Piešťany, 921 01 SK</p>	<p>Ph Eur Bacterial endotoxins Total Aerobic Microbial Count - Pour Plate Total Yeast and Mold Count-Pour Plate</p>

Prepared For	Reports Provided To
<p>PARTICLE s.r.o. Kolonáda 4490/18 Lučenec, 984 01 SK</p> <p>Client Account Number: A01677317RLW Eurofins Quote Number: K8MWPH24000401</p>	<p>Admin (Primary Reporting Contact) admin@particlepeptides.com</p>

PARTICLE s.r.o.
Kolonáda 4490/18
Lučenec, 984 01
SK

Client Account Number: A01677317RLW
Eurofins Quote Number: K8MWPB24000401

Eurofins Sample Number W124AA1668-1			
Original Received Date:		02-May-2024	
Description:		Ipamorelin (PO-2024197)	
		5 mg glass vials	
Containers Submitted:		1 Box(es)	
Analysis	Specification	Result	Unit
Total Aerobic Microbial Count - Pour Plate	----	0	CFU/vial
Method: Current Ph Eur (2.6.12); Current USP/NF <61>; Current JP (English) <4.05 I>; Current BP Appendix XVI			
Analysis Date: 03-May-2024 to 08-May-2024			
Total Yeast and Mold Count-Pour Plate	----	0	CFU/vial
Method: Current Ph Eur (2.6.12); Current USP/NF <61>; Current JP (English) <4.05 I>; Current BP Appendix XVI			
Analysis Date: 03-May-2024 to 08-May-2024			
Ph Eur Bacterial endotoxins	Max. 0.5	<0.5	IU/mg
Method: Current Ph Eur (2.6.14, Method A)			
Analysis Date: 03-May-2024 to 03-May-2024			
Sample Compliance Assessment			
W124AA1668-1 meets the requirement(s) for all listed test(s) where specifications were applied.			

Supplemental Information

Compliance statement was created according to comparison of test results in this report with the limits stated in product specification. Comparison refers to all of the tested parameters.

Laboratory is working in GMP system, is holder of Certificate of GMP compliance of a manufacturer No. SK/018V/2022 for physical-chemical testing and No. SK/019V/2022 for microbiological testing.

Tests are performed in compliance with GMP requirements for quality control laboratories. Tests are performed according to actual version of specification, unless the customer requires otherwise.

Laboratory is not responsible for the information provided by the customer, which can affect the validity of the results.

Test results can be claimed for 14 days from sending the results to the customer. Sample rests are stored 14 days from sending results to the customer and then are disposed according to Testing laboratory's regulations.

Eurofins BPT Testing Facility	Test
Eurofins BioPharma Product Testing Slovakia s.r.o. (Piešťany) Mudronova 25 Piešťany, 921 01 SK	Ph Eur Bacterial endotoxins Total Aerobic Microbial Count - Pour Plate Total Yeast and Mold Count-Pour Plate

Contracted Company: Eurofins BioPharma Product Testing Slovakia s.r.o. (Bratislava)

Kollárovo nám. 9, Bratislava, 811 07 SK
CSPharmaSK@eurofins.sk

Questions about this report should be directed to your project manager or the general email listed above.

Reviewed and electronically signed for Technical Supervisor Approval by
Vojtech Licko, ASM QC
for Eurofins BioPharma Product Testing Slovakia s.r.o. , on 09-May-2024 10:23:16 UTC+02:00
Reviewed and electronically signed for Quality Assurance Release by
Andrea Vargova, QA/QC / Head of Laboratory
for Eurofins BioPharma Product Testing Slovakia s.r.o. , on 09-May-2024 10:26:52 UTC+02:00

Analytical report AR-24-KT-043637-02

**Testing laboratory:**

Eurofins Environment Testing Slovakia s.r.o.
 Robotnícka 820/36, 039 01 Turčianske Teplice
 IČO: 53 248 376
 Place of work:
Accredited testing laboratory Turčianske Teplice
 Robotnícka 820/36, 039 01 Turčianske Teplice
 tel: 043/490 1562
 RegistrationEnviroSK@etcee.eurofins.com, www.eurofins.sk

Customer:

PARTICLE s.r.o.
 Kolonáda 4490/18
 984 01 Lučenec
 SLOVAKIA

Date of Sample Receipt: 22.11.2024 **Date of Testing:** 22.11.2024 - 26.11.2024

Issue date: 03.12.2024

Information about Sampling:

Sampler:

customer

Sample information:

104-2024-00048104

Sample description:

Ipamorelin (PO-2024197)

Material:

Peptidy

Physical and chemical tests

Parameter	Unit	Allowed Value	Measured Value	Uncertainty of Method measurement*	Testing method	E	SL	TT
Arsenic (As)	mg/kg	-	<1,5	-	ICP-MS	-	TR	A
Cadmium (Cd)	mg/kg	-	<0,2	-	ICP-MS	-	TR	A
Lead (Pb)	mg/kg	-	<0,5	-	ICP-MS	-	TR	A
Mercury (Hg)	mg/kg	-	<0,3	-	ICP-MS	-	TR	A

Notes:

E - evaluation

S - satisfied

NS - not satisfied

(A) - accredited sampling

(SA) - accredited sampling executed under the subcontract

SPP - Standard operation procedure

ND - not detected by given method

LOQ, LQ – limit of quantification

CFU - Colony forming unit

NM - necessary quantity

m - the highest allowed value at the case of one sample

M, c - "M" highest allowed value for the number "c" at the case of 5 sample`s evaluation

* - measurement uncertainty – sampling and analysis – determined by extension coefficient k=2 (with probability of 95%). If sample is taken by the customer uncertainty of sampling is not available.

- uncertainty given in % reflects the uncertainty from the result of measurement.

** - Acceptable to consumers and no abnormal change

SL - analysis laboratory: NZ-Nové Zámky, TR-Turčianske Teplice, RK-Ružomberok, TV-Trebišov

TT - type of test

A - accredited test executed at the own test laboratory

N - non accredited test executed at the own test laboratory

SA - accredited test executed under the subcontract

SN - unaccredited test executed under the subcontract

(TM) - testing outside the laboratory at the customer

Disclaimer:

Laboratory is a disclaimer when the information is supplied by the customer (#) and can affect the validity of results. If the sample has been provided by the customer, the results refer to the sample as it was received. Gauges and measuring equipment used for testing were calibrated or attested in accordance with the valid metrological instructions. The above mentioned test results refer to the tested sample only! The result given in this Analytical report and marked as non accredited test shall not be a subject of accreditation. The result given in this Analytical report and marked as sub- delivery is the result of a Subcontractors gauging made under the terms and conditions of a contract concluded with him. This Analytical report shall not be reproduced except in full colour version, without written approval of the laboratory. SNAS is a Signatory to the Multilateral Agreement MRA ILAC.

Responsible for correctness:

Michaela Ruttkayová
Specialist worker

Worked out by: Andrea Podušelová

Validity check of document

**Test Certificate approved by**Michaela Ruttkayová
Specialist worker