

CERTIFICATE OF ANALYSIS

Pierce® LTQ Velos ESI Positive Ion Calibration Solution, 10 mL

Product Number: 88323

Lot Number: XXXXXXXX

Expiration: XXXXXXXX

Summary:

The Thermo Scientific Pierce LTQ Velos ESI Positive Ion Calibration Solution is a ready-use-liquid formulation for the calibration of all Thermo Scientific LTQ Velos and LTQ Orbitrap Velos series mass spectrometers. The only additional materials needed are a 500 microliter Hamilton syringe and liquid infusion line, both supplied with the instrument.

Important Product Information:

- For best results, flush the syringe and infusion line with 50 % methanol before use.
- No additives are required for the use of this calibration solution. Approximately 500 µL of solution are required for complete calibration

Storage:

Upon receipt store at 2 – 8 °C.

Formulation:

n-Butylamine (0.0005 %), Caffeine (20 µg), MRFA (10 µg), and Ultramark 1621 (0.001 %) in a solution of 50 % Acetonitrile/ 25 % Methanol/ 24 % Water/ 1 % Acetic Acid per 10 ml of solution.

Visual:

Clear, Colorless liquid

Components:	Specification	Results
n-Butylamine	Purity > 99.0%	Conform
Caffeine	Purity 98.5 – 101.0%	Conform
Ultramark 1621	Purity ≥ 95.0%	Conform
MRFA	Purity ≥ 98.0%	Conform
Acetonitrile	Purity ≥ 99.9%	Conform
Methanol	Purity ≥ 99.9%	Conform
Acetic Acid	Purity ≥ 99.7%	Conform
Water	LC-MS Grade	Conform

Instruments:

LTQ Velos™ series
LTQ Orbitrap™ Velos series

Related Thermo Scientific Products:

- 88321 Pierce Peptide Retention Time Calibration Mixture, 200 µL
- 88322 Pierce LTQ ESI Positive Ion Calibration Solution, 10 mL
- 88324 Pierce ESI Negative Ion Calibration Solution, 10 mL
- 88325 Pierce Triple Quadrupole Calibration Solution, 10 mL

Additional information:

For MSDS please visit www.thermoscientific.com/pierce

For calibration procedure use

LTQ Series Getting Started Guide(97055-97073)
LTQ Orbitrap Velos Getting Started Tune Plus 2.6 (1250590)

Technical Support:

For Hardware related support call 1-800-532-4752
For Reagent support call 1-800-874-3723

Publish Date: XXXXXX
Name, Title, Signature

This product ("Product") is warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Product documentation, specifications and/or accompanying package inserts ("Documentation") and to be free from defects in material and workmanship. Unless otherwise expressly authorized in writing, Products are supplied for research use only. No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the original purchaser of the Product ("Buyer").
No other warranties, express or implied, are granted, including without limitation, implied warranties of merchantability, fitness for any particular purpose, or non infringement. Buyer's exclusive remedy for non-conforming Products during the warranty period is limited to replacement of or refund for the non-conforming Product(s). There is no obligation to replace Products as the result of (i) accident, disaster or event of force majeure, (ii) misuse, fault or negligence of or by Buyer, (iii) use of the Products in a manner for which they were not designed, or (iv) improper storage and handling of the Products.

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Analysis:	Specification	Results
Relative Intensity (Ratio to the Reference Standard) 195 (Caffeine) 524 (MRFA) 1322 (Ultramark) 1422 (Ultramark) 1522 (Ultramark)	195 Ratio = 0.1 – 2.0 524 Ratio = 0.2 – 2.2 1322 Ratio = 0.5 – 2.0 1422 Ratio = 0.5 – 2.0 1522 Ratio = 0.5 – 2.0	195 Ratio = xx 524 Ratio = xx 1322 Ratio = xx 1422 Ratio = xx 1522 Ratio = xx
% Intensity (Relative to the 1422 Peak) 195 (Caffeine) 524 (MRFA) 1322 (Ultramark) 1522 (Ultramark)	195 = 10 – 50% 524 = 20 – 80% 1322 = 50 – 105% 1522 = 80 – 120%	% Intensity (195 ion) = xx% % Intensity (524 ion) = xx% % Intensity (1322 ion) = xx% % Intensity (1522 ion) = xx%
Baseline Noise Ions (m/z) 74 (n-Butylamine) 195 (Caffeine) 524 (MRFA) 1322 (Ultramark) 1422 (Ultramark) 1522 (Ultramark)	No ions present in the Relative Intensity Spectra scan (+/-) 2 or 10 m/z at: 74: > 50% 195: > 15% 524: > 15% 1322: > 15% 1422: > 15% 1522: > 15%	74 (+/- 2 m/z): No ions present > 50% 195 (+/- 10 m/z): No ions present > 15% 524 (+/- 10 m/z): No ions present > 15% 1322 (+/- 10 m/z): No ions present > 15% 1422 (+/- 10 m/z): No ions present > 15% 1522 (+/- 10 m/z): No ions present > 15%

Insert low mass and high Mass Spectra here

Spectra were acquired on Thermo Scientific LTQ XL following procedure described in LTQ Series Getting Started Guide (97055 - 97073). Note: Spectra will appear differently on LTQ Velos series instruments.

This product ("Product") is warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Product documentation, specifications and/or accompanying package inserts ("Documentation") and to be free from defects in material and workmanship. Unless otherwise expressly authorized in writing, Products are supplied for research use only. No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the original purchaser of the Product ("Buyer").

No other warranties, express or implied, are granted, including without limitation, implied warranties of merchantability, fitness for any particular purpose, or non infringement. Buyer's exclusive remedy for non-conforming Products during the warranty period is limited to replacement of or refund for the non-conforming Product(s). There is no obligation to replace Products as the result of (i) accident, disaster or event of force majeure, (ii) misuse, fault or negligence of or by Buyer, (iii) use of the Products in a manner for which they were not designed, or (iv) improper storage and handling of the Products.