

The Most Comprehensive Certificate in the Industry!

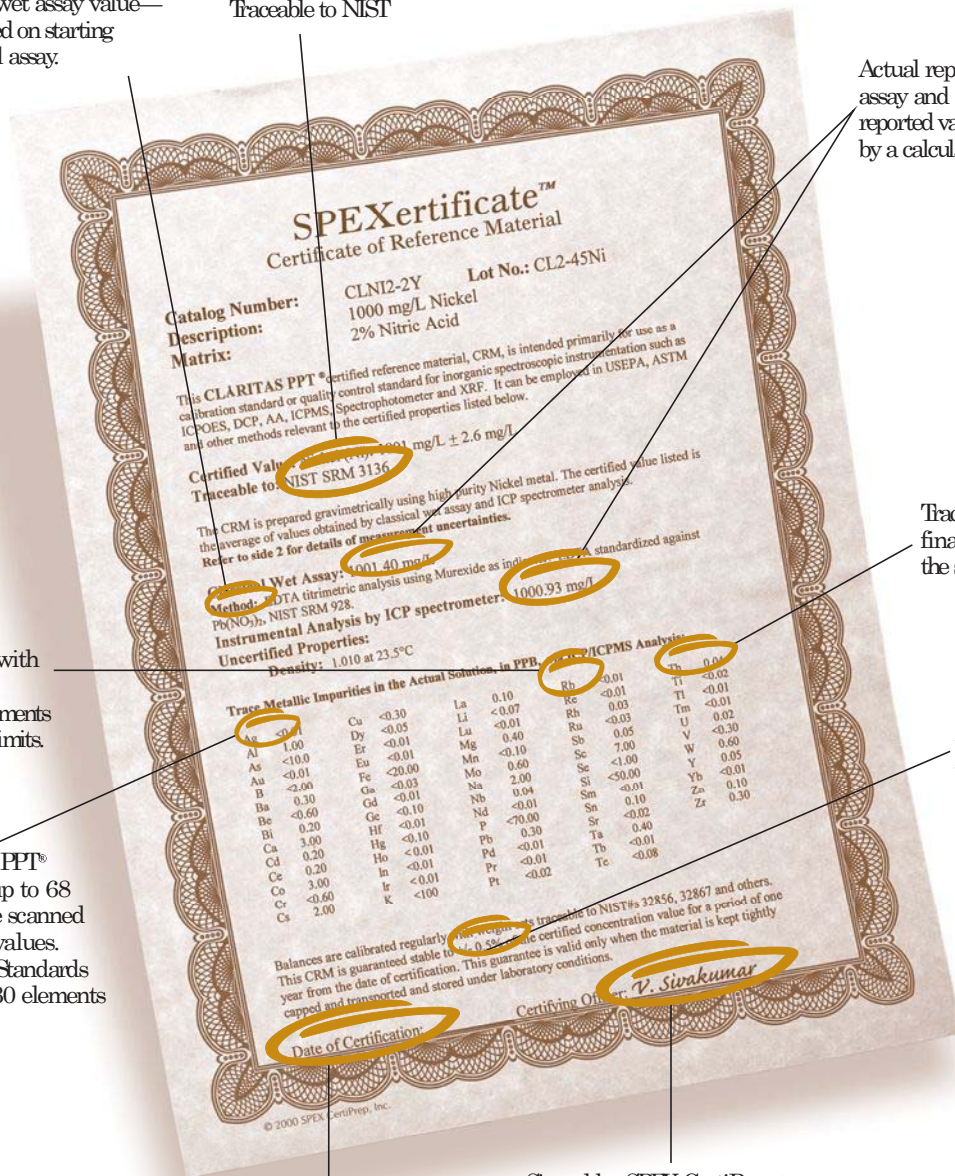
Take a closer look

As you know, every manufacturer of certified reference materials supplies a certificate of analysis with their product. Not all certificates are alike. We know because SPEX CertiPrep® has been supplying the most comprehensive certificate in the industry for years. Many other companies have followed, but no one gives you the information you get from us. We have highlighted why our certificate is the best and what you should look for in a certificate of analysis.

Actual wet assay value—
not based on starting
material assay.

Traceable to NIST

Actual reported values for classical wet
assay and ICP of the final solution—not
reported values of the starting materials or
by a calculation.



Each elemental
impurity listed with
actual value—
not limited to elements
above detection limits.

For Claritas PPT®
Standards, up to 68
elements are scanned
with found values.
Assurance® Standards
have up to 30 elements
scanned.

Trace impurities of the
final solution — not of
the starting material.

Stability and accuracy of
the final solution — not
the starting materials

Signed by SPEX CertiPrep®'s
Vice President of Production.

Stamped with month
and year of shipment.

Report of Certification

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001 system consistent with the following guides:

Guide To The Expression Of Uncertainty In Measurement 1997

EURACHEM/CITAC Guide: Quantifying Uncertainty in Analytical Measurement – Second Edition

ASTM Guide D6362-98

ISO Guide 31: Contents of certificates of reference materials

ISO Guide 34: Quality system guidelines for the production of reference materials.

ISO Guide 17025: Certification of reference materials, general and statistical principles

NIST Technical Note 1297

ILAC-G12-2000: Guidelines for the requirements for the competence of reference materials producers

ISO/REMCO N280

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO 9001:2000 guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For further information contact CRM Sales.

Instructions for Use:

Primary usage of this CRM is in neat form or diluted serially with matrix of a purity at or greater than the purity of the original matrix solution. If dilution is required the diluent must be compatible with all certified analytes and contain stabilizers appropriate for the period of intended use. The CRM can also be used as a spike or with a spike, again with appropriate compatibility considerations. All solutions should be thoroughly mixed, by shaking, prior to use and never pipetted directly from the bottle. All surfaces that come in contact with the solution must be thoroughly cleaned and leached prior to use. Dilutions should be performed only with Class A volumetric glassware.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, analytical instrumentation and personnel have been qualified prior to use. The highest purity acids applicable, 18 megohm, double deionized water, acid-leached triple-rinsed bottles, and Class A glassware have been used in all preparations.

Homogeneity:

The Homogeneity of the CRM has been confirmed by procedures consistent with ISO guide 17025 and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4600-HOMOGEN-1A. This is consistent with the intended use of the CRM.

Statistical estimator and Confidence limits:

The certified value 'X' listed on the reverse of this document is at the 95% level of confidence and can be expressed as

$X = x \pm U$ where x = measured value, U = Expanded uncertainty

$U = k u_c$ where $k=2$ is the coverage factor at the 95% confidence level

u_c is obtained by combining the individual element standard uncertainty components u_i , and $u_c = \sqrt{\sum u_i^2}$

Certification Traveler Report:

All certified values reported were derived from Traveler Report (SPEX CertiPrep's traceability documentation) identified by the lot number of this CRM. For further information contact CRM Sales.

Legal Notice:

SPEX CertiPrep reference materials are not for any cosmetic, drug or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep, Inc. of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep, Inc. be liable for any loss of profits or any incidental, special, or consequential damages.