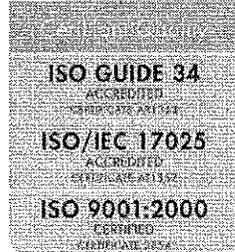


Certificate of Analysis
Certified Reference Standard - NIST Traceable
Ethanol-80
Ethyl Alcohol



Catalog Number: E-030
Solution Lot: FN042808-02
Expiration Date: April 2013
Diluent: Water
Volume per Ampule: 1.2 mL
Storage: Protect from light, refrigerate. Do not freeze.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution when dilution or exact volume is required.

Component	Chromatographic Purity	Concentration
Ethanol	100%	80.0 ± 0.2 mg/dL

▪ Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO Guide 34 at the 95% confidence interval using a coverage factor of k=2, has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density and mass.

NIST Traceability:

- This calibration was conducted using standards whose values are traceable to the SI through NIST.
- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification is performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against a 4-point NIST SRM calibration curve.
- A second NIST SRM control is used to ensure accuracy during solution standard analysis.

Solution Standard Analysis and Homogeneity:

Solution Standard	Lot Number	Concentration compared Calibration Curve (mg/dL)		Homogeneity %RSD	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	FN042808-02	81.6	± 2.0%	0.0%	≤ 2.0%
Prior Lot	FN111406-01	80.6	± 2.0%	1.7%	≤ 2.0%
NIST Control	NIST 2893	81.6	± 2.0%	1.1%	≤ 2.0%

- Concentration is calculated as the average of multiple analyses compared to a NIST SRM calibration curve.
- Homogeneity of the New Lot is ensured through rigorous production process controls developed through statistical analysis and risk assessment of each process and verified by analysis of the solution standard. The %RSD of samples pulled from across the lot demonstrates homogeneity of the New Lot.
- The %RSD of the Prior Lot represents variability of the analysis.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration date.



Lara Sparks

Lara Sparks, Quality Assurance Director

May 21, 2009
Date

Solution Standard Assay Parameters

Analysis Method: GC/FID Headspace
Column: DB-ALC1 30 m x 0.53 mm ID, 3.0 µm film thickness
Temp Program: 40°C hold for 12 min
Injector Temp: 200°C
Detector Temp: 250°C

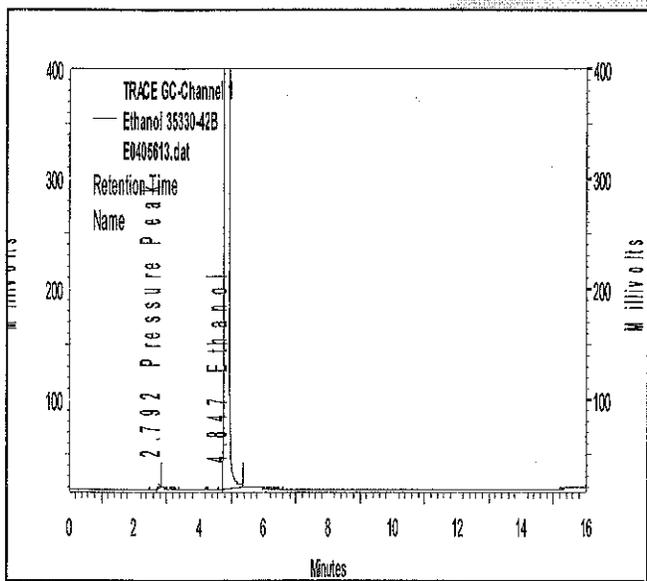
NIST Calibration Curve

NIST SRM Lot # 2897
Calibration Curve: Linear Regression
Number of Points 4
Linearity (r): 1.000

Each point is analyzed in triplicate

Neat Material Verification

GC/FID Headspace Analysis



COA Revision History

Revision	Date	Reason for Revision
00	6/11/2008	Initial version
01	8/19/2008	Revised Footnote 2 to state "analytical concentration" from "prepared concentration".
02	1/26/2009	Revised COA template to comply with ISO/IEC 17025 requirements.
03	5/21/2009	Changed mg/mL to mg/dL in Solution Standard Analysis and Homogeneity box.