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**SLED SIMULATOR SOLUTION CERTIFICATION**

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SIMULATOR SOLUTION LOT NUMBER 14801 FROM REPCO MARKETING, INC.  
IS CERTIFIED FOR USE WITH BREATH TESTING DEVICES. THIS SOLUTION  
WILL PRODUCE A 0.08% READING (0.076% THROUGH 0.084%, INCLUSIVE)  
WHEN USED IN A CALIBRATED SIMULATOR THAT OPERATES AT 34 DEGREES  
CENTIGRADE (33.5 THROUGH 34.5, INCLUSIVE). THE EXPIRATION DATE  
FOR THIS LOT NUMBER IS March 19, 2016, AT 11:59 PM.

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DATE: 5/14/2014 CERTIFIED BY:

Tim Grambow

TIM GRAMBOW  
SLED TOXICOLOGY

REVIEWED BY:

Deborah Banks

DATE:

05/14/2014

DEBORAH BANKS  
SUPERVISOR, SLED IMPLIED CONSENT

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**CERTIFICATE OF ANALYSIS**

**MANUFACTURER AND SUPPLIER: RepCo Marketing, Inc.**

**LOT NUMBER: 14801**

**EXPIRATION DATE: March 19, 2016 at 11:59 p.m.**

RepCo Marketing, Inc. certifies the following:

RepCo Marketing, Inc. manufactured, tested and supplied Lot Number 14801 of Alcohol Certified Solution for simulators. Random samples of said lot number were analyzed by an independent laboratory utilizing a gas chromatograph and found to contain .096 gms/dl +/-0.003 gms/dl wt/vol ethanol (95% Confidence).

The alcohol and distilled water used in the solution were found to be free of any interfering substance.

This solution will produce a vapor alcohol value of .080 +/-3% gms/210L Breath when heated to 34 Degrees Celsius +/-0.2 Degrees Celsius in a simulator (95% Confidence).

The date of manufacture for this lot number is March 20, 2014  
The expiration date for this lot number is March 19, 2016 at 11:59 p.m.

This document is a true representation of the original Certificate of Analysis.



Cecil B. Garner, President  
RepCo Marketing, Inc.

ORDER ID: 140402X004  
PROJECT: Ethanol Assay

DATA RESOURCES INC  
1410 ST ANDREWS RD - STE 200  
COLUMBIA SC 29210  
BUS: 803-561-0331  
FAX: 803-561-0536

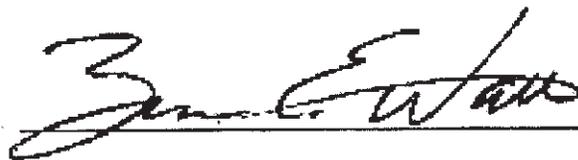
Repco Marketing  
ATTN: Cecil Garner  
3101-188 Stonybrook Drive  
Raleigh NC 27604

CUSTOMER ID: REPCO  
JOB ID: J0006  
DIVISION: DRC  
CREATED ON: 4/2/14  
PAGE: 1

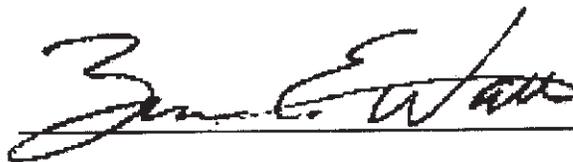
THANK YOU FOR CHOOSING DATA RESOURCES, INC. AS YOUR SOURCE FOR QUALITY LABORATORY SERVICES. DATA RESOURCES, INC. STRIVES TO PROVIDE UNPARALLELED SERVICE AND SUPPORT REGARDING YOUR SAMPLE ANALYSIS REQUIREMENTS. DATA RESOURCES, INC. PROVIDES TECHNICAL EXPERTISE, PROJECT MANAGEMENT SKILLS, CUSTOMER SUPPORT, AND ACCURATE TEST RESULTS.

PLEASE TAKE A MOMENT TO REVIEW THE FOLLOWING ANALYTICAL PACKAGE.

ON THE FOLLOWING PAGES YOU WILL FIND GENERAL REFERENCE INFORMATION ABOUT THE DATA PRESENTED IN THIS ANALYSIS REPORT. THIS INFORMATION AND MORE CAN BE FOUND ON OUR WEBSITE AT [HTTP://DATARESOURCESINC.COM](http://DATARESOURCESINC.COM)



Bruce E. Watt  
Customer Relations, Data Resources Inc



Bruce E Watt  
Laboratory Director, Data Resources Inc - Columbia

ORDER ID: 140402X004  
PROJECT: Ethanol Assay

DATA RESOURCES INC  
1410 ST ANDREWS RD - STE 200  
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RepcO Marketing  
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Raleigh NC 27604

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DIVISION: DRC  
CREATED ON: 4/2/14  
PAGE: 2

FOR ORGANIZATIONAL PURPOSES THE FOLLOWING ANALYTICAL PACKAGE  
IS DIVIDED INTO SECTIONS AS LISTED BELOW:

1. ANALYTICAL DATA -- PERFORMED BY DATA RESOURCES
2. CHAIN-OF-CUSTODY and SAMPLE RECEIPT RECORDS
3. FIELD RECORDS (if applicable) -- PERFORMED BY DATA RESOURCES
4. ANALYTICAL DATA (if applicable) -- PERFORMED BY NETWORK PARTNER(S)

ORDER ID: 140402X004  
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**JOB COMMENTS:**

=> No evidence of contamination was observed during analysis

DATA RESOURCES INC  
1410 ST ANDREWS RD - STE 200  
COLUMBIA SC 29210  
BUS: 803-561-0331  
FAX: 803-561-0536

ORDER ID: 140402X004  
SAMPLE ID: 140402X004-01  
PROJECT: Ethanol Assay  
SAMPLE: Bottle 1

RepcO Marketing  
ATTN: Cecil Garner  
3101-188 Stonybrook Drive  
Raleigh NC 27604

CUSTOMER ID: REPCO  
JOB ID: J0006  
DIVISION: DRC  
CREATED ON: 4/2/14  
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ANALYSIS or SERVICE PERFORMED	RESULT	UNIT	RDL	MDL	METHOD	ANALYSIS D/T	ANALYST	PRIORITY
					QUAL	DF	LOCATOR	
<b>MATRIX:</b> Liquid			<b>CUSTOMER SAMPLE ID:</b> Lot 14801					
<b>COLLECTED ON:</b> 2014-03-21								
<b>COLLECTED BY:</b> REPCO								
<b>RECEIVED AT LAB:</b> 2014-03-25 10:00:00.000								
<i>ETHANOL ASSAY by GC</i>					CAL-GC	2014-04-01 00:00	bewatt	<i>Normal</i>
Ethanol Replicate 3	95.751	mg/dL	5	1.00000		1.0	DRC	
Ethanol Replicate 2	97.582	mg/dL	5	1.00000		1.0		
Ethanol Replicate 1	95.132	mg/dL	5	1.00000		1.0		
Ethanol Average	96.155	mg/dL	5	1.00000		1.0		

ORDER ID: 140402X004  
 SAMPLE ID: 140402X004-02  
 PROJECT: Ethanol Assay  
 SAMPLE: Bottle 2

DATA RESOURCES INC  
 1410 ST ANDREWS RD - STE 200  
 COLUMBIA SC 29210  
 BUS: 803-561-0331  
 FAX: 803-561-0536

RepcO Marketing  
 ATTN: Cecil Garner  
 3101-188 Stonybrook Drive  
 Raleigh NC 27604

CUSTOMER ID: REPCO  
 JOB ID: J0006  
 DIVISION: DRC  
 CREATED ON: 4/2/14  
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ANALYSIS or SERVICE PERFORMED	RESULT	UNIT	RDL	MDL	METHOD QUAL	ANALYSIS D/T DF	ANALYST LOCATOR	PRIORITY
<b>MATRIX:</b> Liquid				<b>CUSTOMER SAMPLE ID:</b> Lot 14801				
<b>COLLECTED ON:</b> 2014-03-21								
<b>COLLECTED BY:</b> REPCO								
<b>RECEIVED AT LAB:</b> 2014-03-25 10:00:00.000								
<b>ETHANOL ASSAY by GC</b>					CAL-GC	2014-04-01 00:00	bewatt DRC	Normal
Ethanol Replicate 3	95.015	mg/dL	5	1.00000		1.0		
Ethanol Replicate 2	95.118	mg/dL	5	1.00000		1.0		
Ethanol Replicate 1	95.218	mg/dL	5	1.00000		1.0		
Ethanol Average	95.117	mg/dL	5	1.00000		1.0		

ONLINE ACCESS TO THIS INFORMATION: Go to <http://DataResourcesInc.com> and choose the menu option "CUSTOMER LOGIN" to enter the CDRC [Client Data Retrieval Center] and view PDF files of your invoices, analytical reports, correspondence and more...

DATA RESOURCES INC  
 1410 ST ANDREWS RD - STE 200  
 COLUMBIA SC 29210  
 BUS: 803-561-0331  
 FAX: 803-561-0536

ORDER ID: 140402X004  
 SAMPLE ID: 140402X004-03  
 PROJECT: Ethanol Assay  
 SAMPLE: Bottle 3

RepcO Marketing  
 ATTN: Cecil Garner  
 3101-188 Stonybrook Drive  
 Raleigh NC 27604

CUSTOMER ID: REPCO  
 JOB ID: J0006  
 DIVISION: DRC  
 CREATED ON: 4/2/14  
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ANALYSIS or SERVICE PERFORMED	RESULT	UNIT	RDL	MDL	METHOD	ANALYSIS D/T	ANALYST	PRIORITY
					QUAL	DF	LOCATOR	
<b>MATRIX:</b> Liquid				<b>CUSTOMER SAMPLE ID:</b> Lot 14801				
<b>COLLECTED ON:</b> 2014-03-21								
<b>COLLECTED BY:</b> REPCO								
<b>RECEIVED AT LAB:</b> 2014-03-25 10:00:00.000								
<b>ETHANOL ASSAY by GC</b>					CAL-GC	2014-04-01 00:00	bewatt	Normal
Ethanol Replicate 3	95.504	mg/dL	5	1.00000		1.0	DRC	
Ethanol Replicate 2	97.912	mg/dL	5	1.00000		1.0		
Ethanol Replicate 1	96.546	mg/dL	5	1.00000		1.0		
Ethanol Average	96.654	mg/dL	5	1.00000		1.0		

DATA RESOURCES INC  
1410 ST ANDREWS RD - STE 200  
COLUMBIA SC 29210  
BUS: 803-561-0331  
FAX: 803-561-0536

ORDER ID: 140402X004  
SAMPLE ID: 140402X004-04  
PROJECT: Ethanol Assay  
SAMPLE: Bottle 4

Repco Marketing  
ATTN: Cecil Garner  
3101-188 Stonybrook Drive  
Raleigh NC 27604

CUSTOMER ID: REPCO  
JOB ID: J0006  
DIVISION: DRC  
CREATED ON: 4/2/14  
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ANALYSIS or SERVICE PERFORMED	RESULT	UNIT	RDL	MDL	METHOD QUAL	ANALYSIS D/T DF	ANALYST LOCATOR	PRIORITY
<b>MATRIX:</b> Liquid				<b>CUSTOMER SAMPLE ID:</b> Lot 14801				
<b>COLLECTED ON:</b> 2014-03-21								
<b>COLLECTED BY:</b> REPCO								
<b>RECEIVED AT LAB:</b> 2014-03-25 10:00:00.000								
<b>ETHANOL ASSAY by GC</b>					CAL-GC	2014-04-01 00:00	bewatt	Normal
Ethanol Replicate 3	94.969	mg/dL	5	1.00000		1.0	DRC	
Ethanol Replicate 2	96.088	mg/dL	5	1.00000		1.0		
Ethanol Replicate 1	96.978	mg/dL	5	1.00000		1.0		
Ethanol Average	96.012	mg/dL	5	1.00000		1.0		

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ORDER ID: 140402X004  
 SAMPLE ID: 140402X004-05  
 PROJECT: Ethanol Assay  
 SAMPLE: QC @ 100

DATA RESOURCES INC  
 1410 ST ANDREWS RD - STE 200  
 COLUMBIA SC 29210  
 BUS: 803-561-0331  
 FAX: 803-561-0536

RepcO Marketing  
 ATTN: Cecil Garner  
 3101-188 Stonybrook Drive  
 Raleigh NC 27604

CUSTOMER ID: REPCO  
 JOB ID: J0006  
 DIVISION: DRC  
 CREATED ON: 4/2/14  
 PAGE: 8

ANALYSIS or SERVICE PERFORMED	RESULT	UNIT	RDL	MDL	METHOD QUAL	ANALYSIS D/T DF	ANALYST LOCATOR	PRIORITY
<b>MATRIX:</b> Liquid				<b>CUSTOMER SAMPLE ID:</b> In-house				
<b>COLLECTED ON:</b> 2014-03-21								
<b>COLLECTED BY:</b> IN HOUSE								
<b>RECEIVED AT LAB:</b> 2014-03-25 10:00:00.000								
<b>ETHANOL ASSAY by GC</b>								
Ethanol Replicate 3	98.834	mg/dL	5	1.00000	CAL-GC	2014-04-01 00:00	bewatt DRC	Normal
Ethanol Replicate 2	101.962	mg/dL	5	1.00000				
Ethanol Replicate 1	99.931	mg/dL	5	1.00000				
Ethanol Average	100.242	mg/dL	5	1.00000				

ORDER ID: 140402X004

PROJECT: Ethanol Assay

DATA RESOURCES INC  
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BUS: 803-561-0331  
FAX: 803-561-0536

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CUSTOMER ID: REPCO  
JOB ID: J0006  
DIVISION: DRC  
CREATED ON: 4/2/14  
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**REPORT FIELDS DEFINED:**

ANALYSIS or SERVICE PERFORMED = The Requested analysis or service performed.  
RESULT = The value or answer acquired from requested analysis or service performed.  
BDL (Below Detection Limit) indicates result is below listed RDL.  
ND (Not Detected) indicates result is below listed MDL.  
< (Less than symbol) indicates that result is lower than value reported  
> (Greater than symbol) indicates that result is higher than value reported  
UNIT = Unit of measure.  
dwb = Identifies result value as Dry Weight Basis.  
QUAL = Additional qualification on result [See DATA QUALIFIERS DEFINED section].  
RDL = (Reportable Detection Limit) The lowest calibrated result achievable by stated analytical method.  
MDL = (Method Detection Limit) The lowest result achievable by stated analytical method.  
METHOD = The stated methodology employed for the analysis or service performed.  
ANALYSIS D/T = The date and time when analysis or service was performed.  
ANALYST LOCATOR= The analyst and location that performed the analysis or service. All work is performed by a division of Data Resources Inc. unless alternate certification number is provided in this field.  
PRIORITY = The requested turn-around priority.

**DATA QUALIFIERS DEFINED:**

C = Analytical result has been confirmed with multiple analyses.  
I = Estimated result, result is < RDL but > MDL.  
JC = See Job Comments.  
J1 = In replicate analyses surrogate recoveries (2 or more for acid fraction, 2 or more for base/neutral fraction, 1 or more for volatile fraction) were out of range but > 10%. The result is an estimated value.  
J2 = In replicate analyses surrogate recoveries (2 or more for acid fraction, 2 or more for base/neutral fraction, 1 or more for volatile fraction) were out of range and < 10%. The result is an estimated value.  
J3 = In replicate analyses internal standard area counts were out of range. The result is an estimated value.  
OH = Holding Time expired prior to analysis  
OH2 = Holding Time expired prior to re-analysis. Initial analysis was performed in holding but with estimated results.  
M1 = The MS %R is outside acceptable control limits. However, MS/MSD RPD is in acceptable control limits.  
2:1 = The BOD reported result failed to meet the Two One Rule.  
SC = See Sample Comments.

**2-CHLOROETHYLVINYLEETHER -vs- \*\*2-CHLOROETHYLVINYLEETHER NOTED ON ANALYSIS REPORT:**

Past studies show that 2-Chloroethylvinylether undergoes hydrolysis when collected in preserved (HCl to pH<2) VOC vials. SCDHEC requires a sampling protocol to involve NON-preserved VOC vials when this parameter is needed. To provide the best quality data for this parameter, DR will perform a separate analysis at an additional cost. Should you request this parameter and only provide preserved VOC vials, the analysis of this parameter will be performed and the parameter identity prefixed with \*\* to identify this potential issue occurring.

**AROCHLOR RESULTS:**

Any positive Arochlor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L).

**LABORATORY pH, CHLORINE, and TEMPERATURE RESULTS:**

If analysis occurs in the lab in excess of 15 minutes of collection, then the result MAY NOT be used for compliance.

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*Certificate of Analysis*  
*Certified Reference Standard - NIST Traceable*  
**Ethanol-100**  
*Ethyl Alcohol*

ISO GUIDE 34  
 CERTIFICATE ARI 353  
 ISO/IEC 17025  
 CERTIFICATE AT 1352  
 ISO 9001:2000  
 CERTIFICATE 0834

**Catalog Number:** E-031  
**Solution Lot:** FN102609-03  
**Expiration Date:** October 2014  
**Diluent:** Water  
**Volume per Ampoule:** 1.2 mL  
**Storage:** 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 and applies to the ampoule stored unopened at the recommended storage condition.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration. The standard should be used immediately after opening to avoid concentration changes due to evaporation.

Component	Solution Chromatographic Purity	Certified Concentration
Ethanol	100%	100.0 ± 0.4 mg/dL
<ul style="list-style-type: none"> <li>• Uncertainty of the concentration, expressed in terms of volume, is an expanded uncertainty in accordance with ISO 17025 and ISO Guide 34 at the 95% confidence interval using a coverage factor of k=2 and has been calculated by statistical analysis of our production methods applicable to ethanol reference standards and incorporates uncertainty of the purity factor, material density and mass measurement. The dispensing process is sufficiently controlled as to not be a significant contributor to uncertainty calculations and is, therefore, excluded. Solution stability is established through real time stability studies and is, therefore, excluded.</li> <li>• When expressed in percentage terms, the relative standard uncertainty of the concentration is 0.175% and the relative expanded uncertainty is 0.35% at the 95% confidence interval (k=2).</li> <li>• The purity factor (PF) mass balance measurement equation is used to calculate the amount of ethanol required to achieve an accurate concentration of the solution standard, accounting for both purity and residual water content.</li> <li>• Purity factor has been established through independent certification of the neat analyte to ISO 17025 standards – See page 2.</li> <li>• Solution purity is verified post ampouling and demonstrates no contamination or degradation has occurred.</li> </ul>		

**Traceability to SI through NIST:**

- This standard has been prepared and certified under the ISO Guide 34 and ISO/IEC 17025 standards and meets the requirements of a Certified Reference Material as defined by ISO.
- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo to ISO 17025 requirements and using NIST traceable weights. Qualification of each balance includes the assignment of a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure each weighing complies with USP tolerances of NMT 0.1% relative uncertainty.
- Balance calibration adjustments are performed weekly utilizing the balance's internal adjustment mechanism and with NIST traceable weights.
- Balance calibration is verified prior to each use and is performed utilizing NIST traceable weights. Weigh tapes from the balance calibration are included in the production batch record for this standard. Production data package available upon request.
- Fill volume is gravimetrically verified throughout the dispensing process using qualified balances calibrated with NIST traceable weights.
- Weight sets used for all balance calibrations are calibrated externally by an ISO 17025 accredited calibration laboratory to NIST standards.
- Concentration of this standard has been analytically verified against a NIST SRM and a Control using a validated method. See page 2.

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. Warranty applies to ampoules stored unopened and stored under the recommended storage conditions. Warranty and expiry do not extend to solutions into which this product has been incorporated. Establishment of shelf life of all such products is the responsibility of the user.



*Lara Sparks*

Lara Sparks, Quality Assurance Director

November 5, 2009

Date

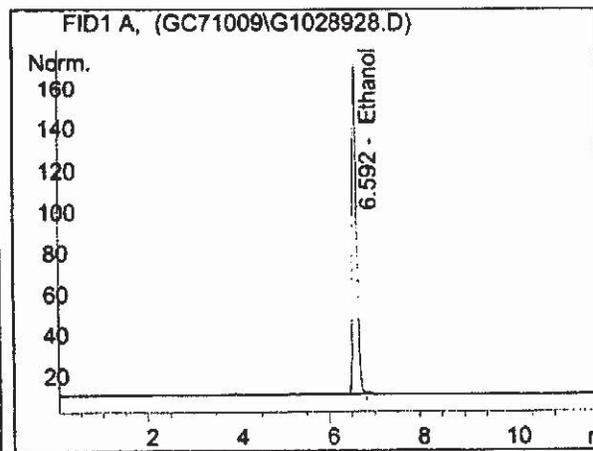
**Analytical Verification of Solution Standard Concentration and Batch Homogeneity:**

Solution Standard	Lot Number	Results compared to NIST SRM Lot 2894 (mg/dL)	Results compared to Control	Homogeneity (ampoule to ampoule consistency) %RSD
New Lot	FN102609-03	100.0	-0.02%	1.22%
Prior Lot	FN091009-01	100.0	-0.03%	1.14%
<b>Acceptance Criteria</b>		<b>±2%</b>	<b>±2%</b>	<b>≤2%</b>

- Concentration is calculated as the average of multiple analyses conducted using a validated Headspace GC/FID method. The validated GC/HS method has been demonstrated to adequately detect and quantitate ethanol concentrations ranging from 5 to 600 mg/dL. Relative standard uncertainty of the analysis is 1.675% and includes both uncertainty of the analytical method and uncertainty of the NIST SRM concentration.
- The Control is independently prepared from a different lot of neat ethanol to ensure no bias in the analysis and independently qualified against a NIST SRM.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot using a stratified random sampling plan demonstrates ampoule to ampoule consistency or homogeneity of the New Lot.
- The %RSD of the Prior Lot represents system suitability on the date of analysis. Triplicate injections of the Prior Lot are bracketed at the beginning and end of the sequence: %RSD criteria ensures proper system performance throughout the sequence.
- All instruments used for certification of the neat materials and verification of the solution concentration and homogeneity are fully qualified through an Installation Qualification and an Operational Qualification which is repeated annually. System suitability is performed daily with rigorous acceptance criteria to ensure the system continues to perform within the validated parameters.

**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


**Neat Material Analysis**

**Purity by GC/FID Analysis:** 100.00%  
**Water Content by Karl Fischer:** 0.08%  
**Purity Factor:** 99.92%

The purity factor (PF) mass balance measurement equation is used to calculate the amount of ethanol required to achieve an accurate concentration of the solution standard, accounting for both purity and residual water content.

