Featured Application: *Blood Alcohol Analysis on Rtx-BAC Plus 1 and Rtx-BAC Plus 2 Columns*

Fast, Definitive Data for Blood Alcohol Testing on Rtx-BAC Plus 1 and Rtx-BAC Plus 2 Columns

- Optimized column selectivities guarantee resolution of ethanol, internal standards, and frequently encountered interferences.
- Robust and reproducible column chemistry ensures longer column lifetime and accurate, consistent results.
- 2-minute analysis time increases lab productivity.

Blood alcohol content is often determined using headspace injection and dual column GC-FID analysis. While this is a relatively straightforward procedure, column choice plays a major role in data quality and reliability. In order to produce accurate results, the primary and confirmation columns must fully separate target analytes from all interferences and produce symmetrical peaks. Due to deficiencies in selectivity and inertness, coelution and tailing peaks are observed on competitor columns, which make confident reporting of target alcohols difficult.

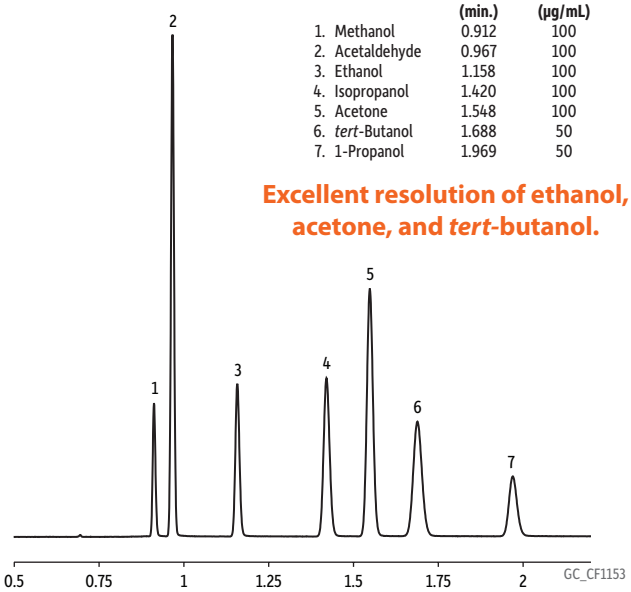
Rtx-BAC Plus 1 and Rtx-BAC Plus 2 columns from Restek are designed to provide definitive results quickly, so you can maximize sample throughput. These columns baseline separate all critical compounds, including ethanol, methanol, acetone, *tert*-butanol (IS), acetaldehyde, isopropanol, and 1-propanol (IS), in less than 2 minutes (Figure 1). Every Rtx-BAC Plus 1 and Plus 2 column is quality tested with these important target compounds to ensure performance. These columns are exceptionally robust, ensuring longer column lifetime and highly reproducible data. For fast, consistent results, try Rtx-BAC Plus 1 and Rtx-BAC Plus 2 columns for analysis of blood alcohol compounds.

Figure 1 Rtx-BAC Plus 1 and Rtx-BAC Plus 2 columns baseline resolve all critical components in less than 2 minutes!

Rtx-BAC Plus 1

Peaks	RT (min.)	Conc. (µg/mL)
1. Methanol	0.912	100
2. Acetaldehyde	0.967	100
3. Ethanol	1.158	100
4. Isopropanol	1.420	100
5. Acetone	1.548	100
6. *tert*-Butanol	1.688	50
7. 1-Propanol	1.969	50

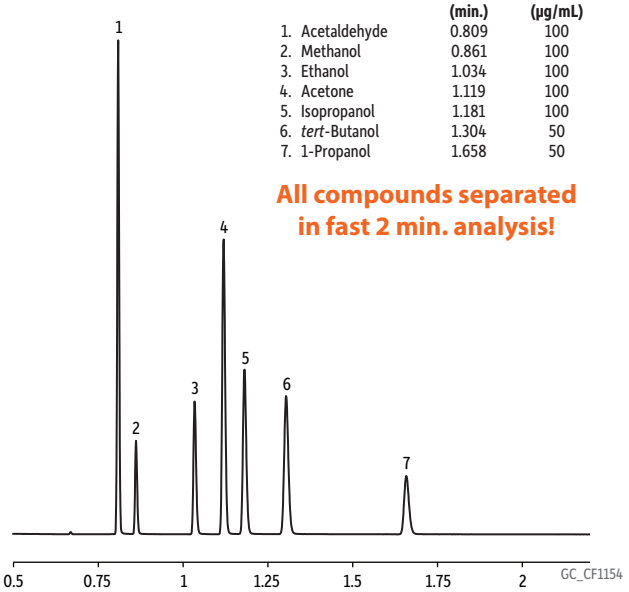
Excellent resolution of ethanol, acetone, and *tert*-butanol.



Rtx-BAC Plus 2

Peaks	RT (min.)	Conc. (µg/mL)
1. Acetaldehyde	0.809	100
2. Methanol	0.861	100
3. Ethanol	1.034	100
4. Acetone	1.119	100
5. Isopropanol	1.181	100
6. *tert*-Butanol	1.304	50
7. 1-Propanol	1.658	50

All compounds separated in fast 2 min. analysis!



Column: Rtx-BAC Plus 1, 30 m, 0.32 mm ID, 1.8 µm (cat.# 18004); Rtx-BAC Plus 2, 30 m, 0.32 mm ID, 0.6 µm (cat.# 18006); **Sample:** Diluent: Water; **Injection:** headspace-loop split (split ratio 50:1); Liner: 1 mm ID straight inlet liner (cat.# 20972); **Headspace-Loop:** Inj. Port Temp.: 200 °C; Instrument: Tekmar HT3; Inj. Time: 3 min.; Transfer Line Temp.: 125 °C; Valve Oven Temp.: 125 °C; Standby flow rate: 50 mL/min; Sample Temp.: 60 °C; Sample Equil. Time: 5 min.; Vial Pressure: 30 psi; Pressurize Time: 1 min.; Loop Pressure: 20 psi; Loop Fill Time: 1 min.; **Oven:** Oven Temp: 40 °C (hold 3 min.); **Carrier Gas:** He, constant flow; Linear Velocity: 80 cm/sec. @ 40 °C; **Detector:** FID @ 240 °C; Make-up Gas Flow Rate: 30 mL/min.; Make-up Gas Type: N_2; **Instrument:** Agilent/HP6890 GC

Columns and Standards for Blood Alcohol Testing

Rtx-BAC Plus 1/Rtx-BAC Plus 2 Columns

- Optimized column selectivities guarantee resolution of ethanol, internal standards, and frequently encountered interferences.
- Robust and reproducible column chemistry ensures longer column lifetime and consistent results.
- Stable to 260 °C.

Rtx-BAC Plus 1 Columns (fused silica)

Description	temp. limits	qty.	cat.#
Rtx-BAC PLUS 1 30 m, 0.32 mm ID, 1.80 µm	-20 to 240/260 °C	ea.	18004
Rtx-BAC PLUS 1 30 m, 0.53 mm ID, 3.00 µm	-20 to 240/260 °C	ea.	18005

Rtx-BAC Plus 2 Columns (fused silica)

Description	temp. limits	qty.	cat.#
Rtx-BAC PLUS 2 30 m, 0.32 mm ID, 0.6 µm	-20 to 240/260 °C	ea.	18006
Rtx-BAC PLUS 2 30 m, 0.53 mm ID, 1.0 µm	-20 to 240/260 °C	ea.	18007

Blood Alcohol Resolution Control Standards

- Use to verify the retention time for each compound normally included in a blood alcohol test, and to verify that the compounds are resolved from and do not interfere with one another.
- Includes 1-propanol internal standard.
- Intended for qualitative use only.

Certified reference materials (CRMs) manufactured and QC-tested in ISO-accredited labs satisfy your ISO requirements.

BAC Resolution Control Standard n-P (6 components)

Acetaldehyde (75-07-0)
Acetone (67-64-1)
Ethanol (BAC) (64-17-5)
Methanol (67-56-1)
1-Propanol (*n*-Propanol) (71-23-8)
2-Propanol (Isopropanol) (67-63-0)

100 mg/dL each in water, 1 mL/ampul — cat.# 36010 (ea.)

No data pack available.

BAC Resolution Control Standard t-B (6 components)

Acetaldehyde (75-07-0)
Acetone (67-64-1)
tert-Butanol (TBA) (75-65-0)
Ethanol (BAC) (64-17-5)
Methanol (67-56-1)
2-Propanol (Isopropanol) (67-63-0)

100 mg/dL each in water, 1 mL/ampul — cat.# 36011 (ea.)

No data pack available.

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