



Rtx[®]-35 Amine capillary columns

from **RESTEK**

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Importers & Manufacturers
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Rtx[®]-35 Amine

Exceptional Inertness for Amines & Basic Compounds

- ✓ Sensitive, low-level amine analysis without derivitization.
- ✓ Intermediate polarity provides unique selectivity.
- ✓ Thermal stability to 310°C allows resolution of higher molecular weight amines.

www.restekcorp.com

Improve the Response and Peak Shape of Active Amines

GC analysis of basic compounds, such as amines, at ppm levels is difficult without derivitization or column priming. Restek's new Rtx[®]-35 Amine capillary column combines a special deactivation technology with an intermediate-polarity stationary phase to reduce adsorption and peak tailing for amines and to provide unique selectivity. In fact, you can achieve consistent response for basic compounds at low ppm levels without derivitization or column priming.

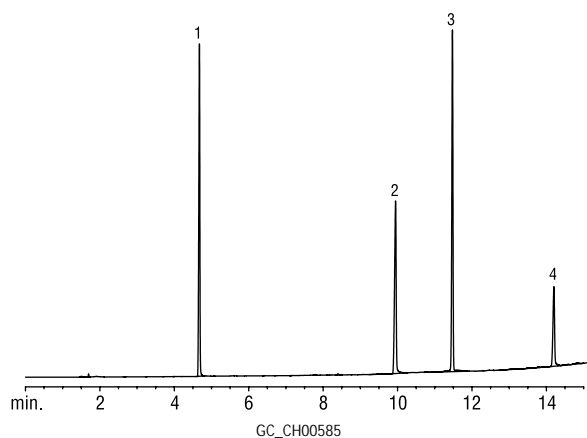
Ethanolamines are particularly difficult to analyze because of their basic nature and the hydroxyl group that can interact with silanols from the column. The response and peak shape of ethanolamines was evaluated on an Rtx[®]-35 Amine column (Figure 1). The Rtx[®]-35 Amine column exhibits excellent peak shape and significantly higher response for these active ethanolamines.

Eliminate Derivitization of Basic Drug Compounds

When analyzing basic drugs by GC, derivitization often is required to reduce peak tailing or improve response. These complex procedures can improve quantitative results, but they add cost and time to the analysis. Using the Rtx[®]-35 Amine column eliminates the need for derivitization and provides the selectivity to analyze a wide range of drug compounds. Underivitized sympathomimetic amines exhibit excellent peak shape and separation using a 30m, 0.25mm ID, 0.5µm Rtx[®]-35 Amine column (Figure 2). Many over-the-counter and prescribed medications for cold and flu relief contain amines and other basic compounds. The unique deactivation and selectivity of this new column simplifies the analysis for many of the common components in these medications (Figure 3).

Figure 1.

The Rtx[®]-35 Amine column exhibits improved response and peak shape for ethanolamines.



1. monoethanolamine
2. diethanolamine
3. triethyleneglycol monomethylether
4. triethanolamine

Conditions for Figure 1

Rtx[®]-35Amine 30m, 0.32mm ID, 1.0µm (cat.# 11354)
Sample: 500µg/mL ethanolamine standard in water
Inj.: 1.0µL split (split ratio 10:1),
cup splitter inlet liner (cat.# 20709)
Inj. temp.: 300°C
Carrier gas: helium, constant pressure
Linear velocity: 40cm/sec. @ 50°C
Oven temp.: 50°C (hold 0.50min.) to 280°C @15°C/min.
Det.: FID @300°C

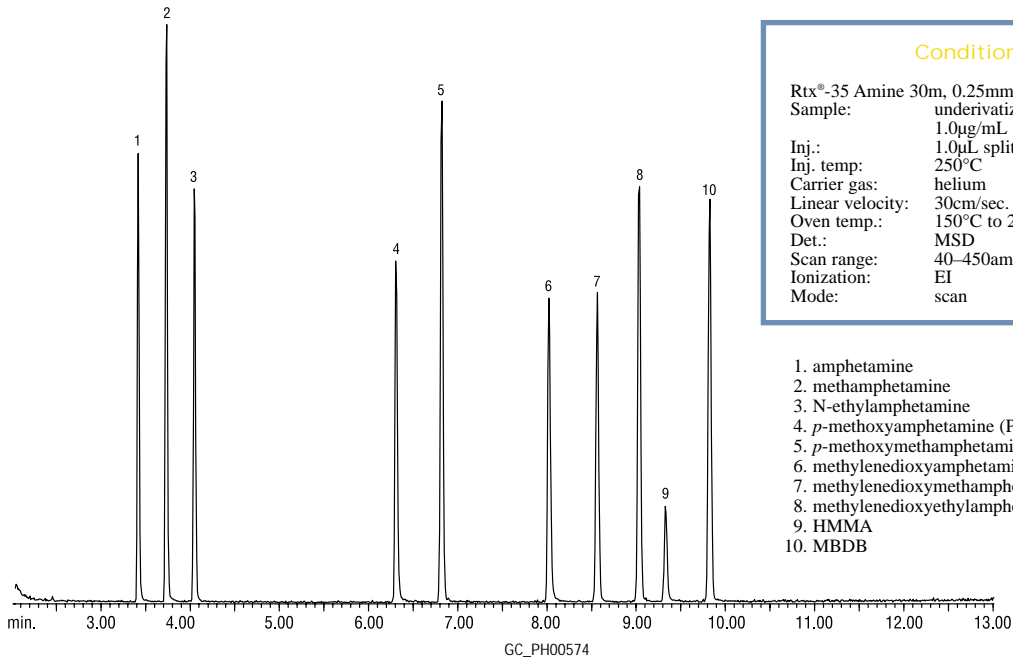
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Figure 2:

Analyze underivatized sympathomimetic amines by GC/MS using the Rtx[®]-35 Amine column.



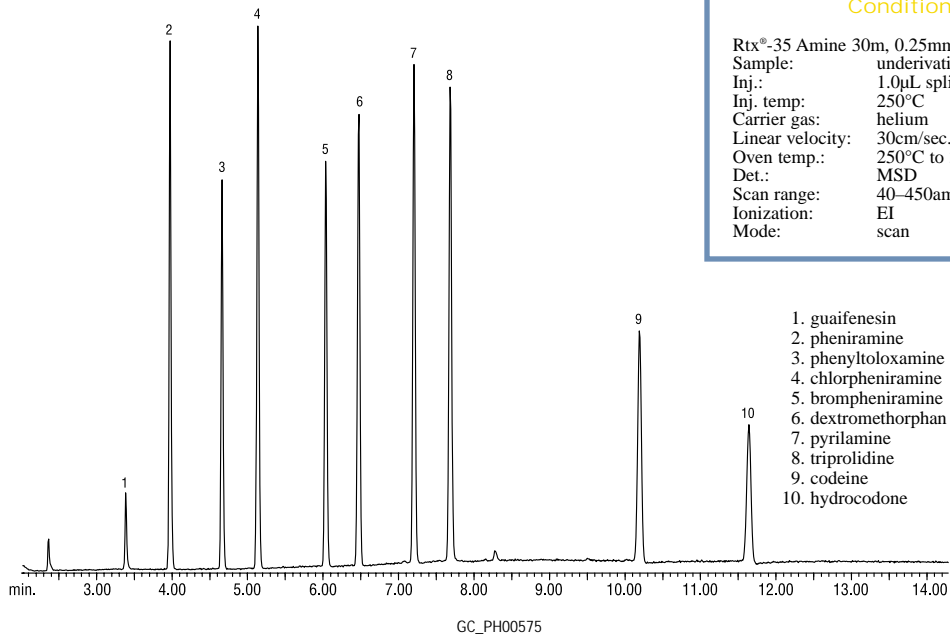
Conditions for Figure 2

Rtx[®]-35 Amine 30m, 0.25mm ID, 0.50µm (cat.# 11338)
 Sample: underivatized sympathomimetic amines, 1.0µg/mL
 Inj.: 1.0µL split injection (split ratio 40:1)
 Inj. temp: 250°C
 Carrier gas: helium
 Linear velocity: 30cm/sec.
 Oven temp.: 150°C to 240°C @ 7°C/min.
 Det.: MSD
 Scan range: 40–450amu
 Ionization: EI
 Mode: scan

1. amphetamine
2. methamphetamine
3. N-ethylamphetamine
4. *p*-methoxyamphetamine (PMA)
5. *p*-methoxymethamphetamine (PMMA)
6. methylenedioxyamphetamine (MDA)
7. methylenedioxyethamphetamine (MDMA)
8. methylenedioxyethylamphetamine (MDEA)
9. HMMA
10. MBDB

Figure 3:

The Rtx[®]-35 Amine column simplifies the GC/MS analysis of common cold and flu medications.



Conditions for Figure 3

Rtx[®]-35 Amine 30m, 0.25mm ID, 0.50µm (cat.# 11338)
 Sample: underivatized cold medicine, 1.0µg/mL
 Inj.: 1.0µL split injection (split ratio 40:1)
 Inj. temp: 250°C
 Carrier gas: helium
 Linear velocity: 30cm/sec.
 Oven temp.: 250°C to 300°C @ 7°C/min. (hold 7 min.)
 Det.: MSD
 Scan range: 40–450amu
 Ionization: EI
 Mode: scan

1. guaifenesin
2. pheniramine
3. phenyltoloxamine
4. chlorpheniramine
5. brompheniramine
6. dextromethorphan
7. pyrilamine
8. triprolidine
9. codeine
10. hydrocodone

Rtx[®]-35 Amine





Rtx®-35 Amine

| ID | df (µm) | temp. limits | 15-Meter | 30-Meter |
|--------|---------|----------------|----------|----------|
| 0.25mm | 0.50 | 0 to 290/310°C | 11335 | 11338 |
| | 1.00 | 0 to 280/300°C | 11350 | 11353 |
| 0.32mm | 1.00 | 0 to 280/300°C | 11351 | 11354 |
| | 1.50 | 0 to 270/290°C | 11366 | 11369 |
| 0.53mm | 1.00 | 0 to 260/280°C | 11352 | 11355 |
| | 3.00 | 0 to 240/260°C | 11382 | 11385 |



Base-Deactivated Guard Columns

- Provide excellent inertness for the analysis of basic compounds.
- Recommended for use with Rtx®-5 Amine, Rtx®-35 Amine, and Stabilwax®-DB capillary columns.
- Tested with basic amine test mix.
- Batch test chromatogram included.

| Nominal ID | Nominal OD | 5-Meter | 5-Meter/6-pk. |
|------------|---------------|---------|---------------|
| 0.25mm | 0.37 ± 0.04mm | 10000 | 10000-600 |
| 0.32mm | 0.45 ± 0.04mm | 10001 | 10001-600 |
| 0.53mm | 0.69 ± 0.05mm | 10002 | 10002-600 |



Base-Deactivated Inlet Liners For Agilent GC's

- Reduces adsorption of amines in the injector.
- Available for most GC systems.
- Economical 5- and 25-packs.

| ea. | 5-pk. | 25-pk. |
|-----------------------------------|-------------|--------------|
| 4mm Split Straight w/ Wool | | |
| 20781-211.1 | 20782-211.5 | 20783-211.25 |
| Cyclosplitter® | | |
| 20706-210.1 | 20707-210.5 | — |
| 4mm Splitless Straight | | |
| 20772-210.1 | 20773-210.5 | 20774-210.25 |
| 2mm Gooseneck | | |
| 20795-210.1 | 20796-210.5 | 20797-210.25 |
| 4mm Gooseneck | | |
| 20798-210.1 | 20799-210.5 | 20800-210.25 |

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