



ChromaBLOGraphy

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Rt®-Alumina BOND columns show unique retention characteristics for hydrocarbons.

also available

Metal MXT® Columns

Rugged, flexible, Siltek® treated stainless steel tubing; inertness comparable to fused silica tubing. See **page 108** for our MXT®-Alumina BOND/Na₂SO₄ columns.

similar phases

GC-Alumina KCl, CP-Al₂O₃/KCl

Light Hydrocarbon Analysis

Rt®-Alumina BOND Columns

1. Highly selective for C1-C5 hydrocarbons; separates all unsaturated hydrocarbon isomers above ambient temperatures.
2. Reactivity of aluminum oxide stationary phase is minimized so that column response for polar unsaturates, such as dienes, is optimized. Column sensitivity or response ensures a linear and quantitative chromatographic analysis for these compounds.
3. Strong bonding prevents particle generation. The column can be used in valve switching operations, without release of particles that can harm the injection and detection systems.
4. The Rt®-Alumina BOND column is stable up to 200 °C. If water is adsorbed on the column, it can be regenerated by conditioning at 200 °C. Full efficiency and selectivity will be restored.
5. High capacity and loadability give exceptionally symmetric peaks; ideal for volatile hydrocarbon separations at percent levels, as well as impurity analyses at ppm concentrations.

Rt®-Alumina BOND/Na₂SO₄ Columns (fused silica PLOT)

(Na₂SO₄ deactivation)

| ID | df | temp. limits | 30-Meter | 50-Meter |
|--------|------|--------------|----------|----------|
| 0.25mm | 4µm | to 200°C | 19775 | |
| 0.32mm | 5µm | to 200°C | 19757 | 19758 |
| 0.53mm | 10µm | to 200°C | 19755 | 19756 |

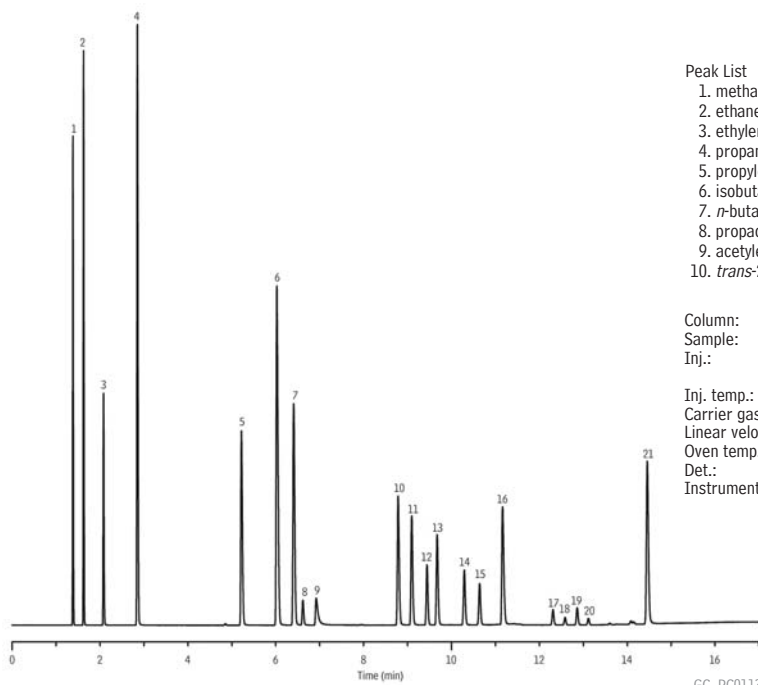
Rt®-Alumina BOND/KCl Columns (fused silica PLOT)

(KCl deactivation)

- Acetylene elutes before C4 hydrocarbons (impurities in butane/isobutane).
- Methyl acetylene (impurity in 1,3-butadiene) elutes before 1,3-butadiene.

| ID | df | temp. limits | 30-Meter | 50-Meter |
|--------|------|--------------|----------|----------|
| 0.25mm | 4µm | to 200°C | 19776 | |
| 0.32mm | 5µm | to 200°C | 19761 | 19762 |
| 0.53mm | 10µm | to 200°C | 19759 | 19760 |

Refinery gas hydrocarbons on an Rt®-Alumina BOND/Na₂SO₄ column.



| Peak List | |
|--------------------|-----------------------|
| 1. methane | 11. 1-butene |
| 2. ethane | 12. isobutylene |
| 3. ethylene | 13. cis-2-butene |
| 4. propane | 14. isopentane |
| 5. propylene | 15. n-pentane |
| 6. isobutane | 16. 1,3-butadiene |
| 7. n-butane | 17. trans-2-pentene |
| 8. propadiene | 18. 2-methyl-2-butene |
| 9. acetylene | 19. 1-pentene |
| 10. trans-2-butene | 20. cis-2-pentene |
| | 21. n-hexane |

Column: Rt®-Alumina BOND/Na₂SO₄, 30m, 0.53mm ID, 10.0µm (cat.# 19755)
 Sample: refinery gas hydrocarbons through C6
 Inj.: 10µL split, 40mL/min. split vent flow rate
 2mm split Precision® liner w/wool (cat.# 20823)
 Inj. temp.: 200°C
 Carrier gas: helium, constant pressure (5.0psi, 34.5kPa)
 Linear velocity: 37.3cm/sec. @ 60°C
 Oven temp.: 60°C (hold 2 min.) to 200°C @ 10°C/min. (hold 1 min.)
 Det.: FID @ 200°C
 Instrument: Agilent 5890