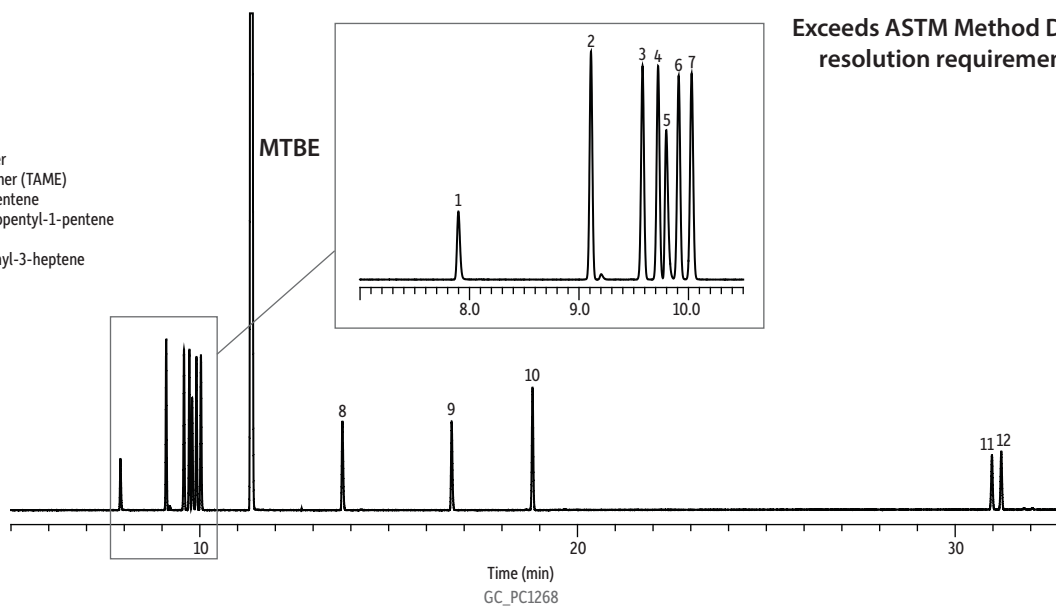


Impurities in Methyl-*t*-Butyl Ether (MTBE) on Rtx®-DHA-100 (ASTM D5441)

- Peaks**
1. Methanol
 2. iso-Pentane
 3. *n*-Pentane
 4. *trans*-2-Pentene
 5. *tert*-Butanol
 6. *cis*-2-Pentene
 7. 2-Methyl-2-butene
 8. *tert*-Butyl ethyl ether (TAME)
 9. *tert*-Amyl methyl ether (TAME)
 10. 2,4,4-Trimethyl-1-pentene
 11. 4,4'-Dimethyl-2-neopentyl-1-pentene (triisobutylene)
 12. 2,2,4,6,6-Pentamethyl-3-heptene (triisobutylene)



Exceeds ASTM Method D5441 resolution requirements!

Column Rtx®-DHA-100, 100 m, 0.25 mm ID, 0.50 µm (cat.# 10148)
Sample ASTM D5441 MTBE contaminants mix
Conc.: 1% (w/w) each component in MTBE
Injection
Inj. Vol.: 0.2 µL split (split ratio 200:1)
Liner: Cup splitter (cat.# 20710)
Inj. Temp.: 200 °C
Oven
Oven Temp.: 50 °C (hold 13 min) to 180 °C at 10 °C/min (hold 7 min)
Carrier Gas He, constant pressure (39.3 psi, 271.0 kPa)
Linear Velocity: 23 cm/sec @ 50 °C

Detector FID @ 250 °C
Make-up Gas
Flow Rate: 24 mL/min
Make-up Gas
Type: N₂
Hydrogen flow: 30 mL/min
Air flow: 358 mL/min
Instrument Agilent 7890A GC
Notes Resolution between *trans*-2-pentene/*tert*-butanol and *tert*-butanol/*cis*-2-pentene exceeds the ASTM Method D5441 requirement of R ≥ 1.3.