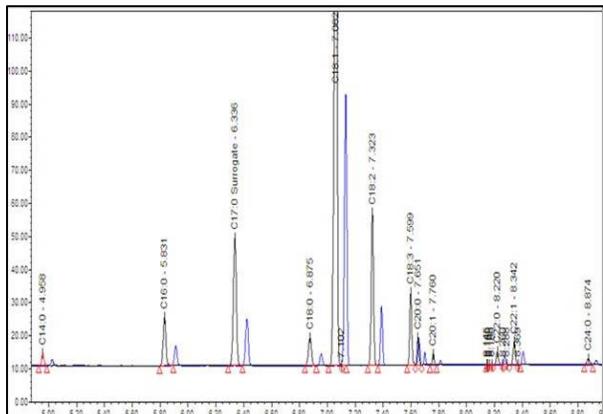




GC Troubleshooting Series

Part Seven: Changes in Peak Size



Getting Started: Look for Trends

To begin evaluating your changes in peak size, look for trends. If all the peaks change in the same way, it is likely due to sample introduction, the GC inlet or a detector problem.

If only some peaks are affected, check to see if these peaks are of the same volatility or functional groups and evaluate that way.

Changing the liner can help improve vaporization for less volatile components. Glass wool at the bottom of the liner helps. If the issue appears to affect only more volatile compounds, look for leaky vials, a leaky syringe or changes in sample prep.

Possible Cause: Supplies -- Vial seal integrity or damaged septa

The quality of your GC supplies has a direct influence on your results. Agilent certified vials are super-clean for GC use, and are manufactured to exacting specifications for the perfect fit.

See www.agilent.com/chem/vialsguide for more information,

Possible Cause: Change in Detector Response

Check gas flows, temperature and settings.

If you are getting background noise, it is likely not the detector, but system contamination.

Possible Cause: Process Issues

Check key process steps:

- Split ratio
- Injection volume
- Sample concentration
- Purge activation time

Possible Cause: Sample Backflash

Steps to prevent sample backflash :

- Reduce injection volume
- Lower inlet temperature
- Consider a larger volume liner
- Pressure pulse the injection (if possible)
- Change solvents

Download the vapor volume calculator to help you with this at www.agilent.com/chem/flowcalculator

Possible Cause: Column contamination, column activity

Trim the column to remove affected area, or replace it if this can't resolve the problem.

Possible Cause: Decomposition from Inlet Contamination

Perform inlet maintenance regularly to reduce the likelihood of problems.

Summary / Wrap-up

Troubleshooting Changes in Peak Size:

- Check your syringe for clogging or leaking
- If only some analytes are affected, could it be volatility? Try changing to a liner with glass wool, or shaking and re-injecting your sample.
- Check the vial seal
- Check the septa
- Check the detector response and gas flows
- Check the split ratio
- Check for changes in the purge activation time
- Make sure your injector volumes are the same, and your sample concentration is the same
- Check for column contamination and column activity
- Check for co-elutions caused by temperature or stationary phase
- Look for injector discrimination, if you're doing split injections (liner)
- Consider sample backflash
- Look for decomposition from the inlet contamination (again: good GC inlet maintenance is key!)