CFT BACKFLUSH Reduce run time and increase throughput

High-boiling sample matrix components must be fully eluted before starting your next run. This usually means adding a backflush method to your method— which can dramatically increase cycle times. Using Agilent CFT Backflush configurations eliminates the need for backflush by reversing columns flow, resulting in:

- **Higher productivity** through shorter analytical run times
- **Less maintenance**: Removing high boilers reduces the need for frequent bakeout and column maintenance, and simplification
- **Lower operating costs**: Ensures last longer when they are not exposed to high-temperature bakeout routines, so the build-up of high-boiling compounds
- **Better data**. Continuous system contamination is minimized to ensure long term data quality

Cycle time shortened by more than 30%

Deans Switch offers several unique benefits, including:

- **Risk-free inlet and column maintenance** by preventing air from entering the GC.
- **Simple leak-free connections**, part of the Inert Flow Path.
- **Fast routine maintenance and simple backflush** resulting in shorter analysis times and increased throughput by removing matrix contamination from the system.
- **Simple backflush resulting in shorter analysis times** and increased throughput by removing matrix contamination from the system.

Agilent GC x GC method uses two columns, typically of very different polarities, installed in series with a differential flow modulator between them. Four key properties of the modulator are:

1. **Inert surfaces** that prevent peak tailing and analyte loss
2. **Small dead volumes** that allow the Deans Switch to closely divide the peak into several cuts
3. **Low thermal mass** that allows the Deans Switch to closely divide the peak into several cuts
4. **UltiMetal Plus Flexible metal ferrules and fittings** that prevent peak tailing and analyte loss

Complex matrices often have many overlapping components that can require complex analyses of interest. In those cases, additional selectivity is needed. A Deans Switch is an easy—and affordable—way to further resolve multiple components using two different columns in the same system. Additional selectivity can be achieved with two separate detectors. Agilent CFT Deans Switch offers several analysis benefits, including:

- **Low thermal mass** that allows the Deans Switch to closely divide the peak into several cuts
- **Small dead volumes** that allow close separation of components
- **UltiMetal Plus Flexible metal ferrules and fittings** that keep Peak tailing and peak distortion to a minimum
- **Inert surfaces** that prevent peak tailing and analyte loss
- **Backflush capabilities** that can reduce run times and prolong column life

Analysis of TOFA content and distribution in biodiesel blends using heart-cutting 2D gas chromatography

Analysis of TOFA content and distribution in biodiesel blends using heart-cutting 2D gas chromatography

**GC X GC FLOW MODULATOR** 2D data for complex mixtures

Two-dimensional GC (GC x GC) is a powerful technique that can separate very complex mixtures—such as those found in biodiesel processing, environmental, and food/fragrance applications. This Agilent GC x GC method uses two columns, typically of very different polarities, installed in series with a differential flow modulator between them. Four key properties of the modulator are:

- **Requires no cryo-cooling to re-focus**, providing significant savings in the lab
- **Collects the material from the first column**, dividing the peak into several cuts
- **Focusses the material collected** toward co-inject into second column
- **Introduces the bands sequentially** into the second column

**FLOW SPLITTERS** Gather more data in less time

Analyzing complex samples may require using different GC detectors to meet detection limits, overcome matrix interferences, or confirm unknown peaks. A CFT splitter—which splits effluent from a single column to two or three columns in the same GC—is a time saving alternative. However, this technique can be hampered by technical limitations of the splitting hardware. Agilent CFT Splitters solve these challenges with leading-edge innovations like those:

- **The column and restrictors attach to the modulator using UltiMetal Plus Flexible metal ferrules** that do not rupture, weld, melt, or leak—over many multiple oven cycles
- **All surfaces are deactivated** as part of the inert flow path
- **Aux EPC allows for optimal flow to GC and MS detectors on the same system**
- **Calculated determining the correct restrictor dimensions** for specific applications

Screening of a whole blood sample

**DEANS SWITCH** Increase the resolving power of your GC

A Deans Switch is an easy—and affordable—way to further resolve multiple components using two different columns in the same system. Additional selectivity can be achieved with two separate detectors. Agilent CFT Deans Switch offers several analysis benefits, including:

- **Low thermal mass** that allows the Deans Switch to closely divide the peak into several cuts
- **Small dead volumes** that allow close separation of components
- **UltiMetal Plus Flexible metal ferrules and fittings** that keep Peak tailing and peak distortion to a minimum
- **Inert surfaces** that prevent peak tailing and analyte loss
- **Backflush capabilities** that can reduce run times and prolong column life

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**PURGED UNIONS** Fast routine maintenance and simple backflush

During GC/MS inlet and column maintenance, shedding down the MS for cleaner cooling and venting can cause significant down time. The Agilent Purged Unions eliminates the need for cooling and venting by providing simple backflush capabilities to an existing GC/MS/MS method. The solution:

- **Simple leak-free connections**
- **Risk-free inlet and column maintenance** by preventing air from entering the MS
- **Simple backflush resulting in shorter analysis time** and increased throughput by removing matrix contamination from the system.

Purged Unions utilize configuration for rapid and universal GC/MS backflushing, applied to selected real-time monitoring.

Control the backflush flow during inlet and column maintenance to avoid venting the MS.