GAS CHROMATOGRAPHY
50 YEARS OF INNOVATION IN
Fused Silica Capillary Column
Provides increased precision and sensitivity, and dramatically improves ability to separate similar compounds
• Increased the number of pesticides that can be detected in food
• Allows regulation and enforcement of environmental pollutants that could not be found previously
• Allows analysis of fuels for extreme toxic chemicals, avoiding environmental contamination after combustion

1970s

Electronic Pneumatic Control
Provides precise carrier gas pressure control, increasing the precision and accuracy of compound retention times making it easier to identify and quantify
• Increased reliability of retention times allows for comparison between retention times and data from previous analyses
• Consistent retention times allows for quality control of final production
• Reliable results for high boiling point compounds

1980s

Retention Time Locking
Delivers the same retention time for the same method day to day, column to column, instrument to instrument, regardless of detection system
• Decreased training times and ensuring quality control across the laboratory or multiple laboratory sites
• Specific and unchanging retention times allows mass spec libraries of different compounds with the same mass pattern to be different
• Creates very narrow isolation windows for high resolution GC/MS which improves this limit free band width and precision

1990s

Capillary Flow Technology
Precisely delivers carrier gas and splits with low noise, measurable, low thermal mass device. Set up in flow patterns, backflush, time switch, GCxGC, and jacked valve, these devices provide the ability to separate challenging samples in a single system
• Less time in sample preparation by separating high boiling point contaminates, keeping it from the most sensitive parts of the GC or GC/MSD system
• Reliable analysis is as easy as splitting the backflush device to separate retention times by running the retention times at the same temperature. CCGS devices provide complete separation without need for cryo cooling

2000s

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2010s

Inert Flow Path
Completely inert flow path (IFP) from inlet to detector, eliminating potential compound degradation anywhere the compound may reside
• Lower detection limits of active compounds as increased length of time between cleaning, due to active compound degradation. Comparable results better for a longer period of time reducing overall column time
• IFP demonstrates the unique advantages of active compounds (i.e. introduced) at breakthrough to other compounds as a direct system
• IFP increases the detectability of highly active compounds such as sulfur (analyzed for in all production) for a longer period of time

TODAY

Intuvo 9000 GC System
Agilent Technologies launches the Intuvo 9000 GC System, changing the paradigm in GC and transforming the way GC laboratory operations are performed
• Direct Heating: Through put is improved. Unlike conventional GC systems, Intuvo direct conductive heating to temperature program the entire flow path and analytical column. Direct heating uses less power, is smaller, and can be heated and cooled much faster
• Click-and-Run Connections: Unplanned downtime and associated business disruption is eliminated. Ferrules are eliminated and advanced direct face seal connections are made with an audible and tactile ‘click’ instead
• Guard Chip and Trim-free Column: Trimming is eliminated and productivity is increased as well relaying to eliminate the skill set necessary to operate a GC systems. Intuvo has a simple, disposable Guard Chip which keeps unwanted contaminants from entering the system. The new time less plug valves allow the system to be installed faster and more reliably than conventional columns

1970s 1980s 1990s 2000s 2010s TODAY