ENTECH INSTRUMENTS

See What's Really There™

2022 CATALOG

Solutions for Chemical Monitoring & Analysis

Table of Contents

President's Letter

Entech Instruments is continuing its tradition of providing the most advanced and accurate sample preparations systems available for headspace and gas sample analysis by GC and GCMS. Our new Multi-Capillary Column Trapping Systems (MCCTS) are transforming the way that gas phase sample preconcentration is performed prior to GC injection, all without the use of liquid nitrogen or even electronic cooling systems.   These "fan cooled", extremely robust and reliable multi-stage capillary column traps manage water and CO2 hundreds of times better than any packed trap system. This means much faster release for better chromatography, supporting "faster" GC methods, while also demonstrating far better immunity to contamination when exposed to high concentration samples. Our MCCTS traps have been implemented in a full cryogen free TO15 solution with much faster GC injections and shorter run times than other TO15 systems on the market. Other applications using this revolutionary capillary trapping technology will also soon be announced.

Entech's patent pending Sorbent Pen™ technology takes SPME to the next level by providing enhanced sensitivity, improved quantitation, and greater robustness than its fiber-based predecessor. Sorbent Pens utilize a unique flow through cartridge that forms a seal on a vial allowing a vacuum to be created within the vial. This new technique called VASE (Vacuum Assisted Sorbent Extraction) has been demonstrated to cover the entire range of analytes from the lightest volatile compounds (Freon 12/Vinyl Chloride and others) to very heavy 5-6 ring PAH compounds, while remaining in the headspace to avoid actual contact with the sample matrix. With 50-150x higher phase loading and the use of traditional adsorbents with thousands of times more surface area than SPME, the Sorbent Pen™ can fully extract difficult compounds from complex matrices providing superior sensitivity and reproducibility. Sorbent Pens are also available for performing Diffusive and Active air monitoring, making the Sorbent Pen technique extremely versatile. Our newly released SPR40 -Sample Preparation Rail promises to be a game changer for headspace sample preparation and general thermal desorption methods. Rather than desorbing a TD tube into a completely different instrument with separate traps, transfer lines, and rotary valves to have to clean and maintain, the SPR40 allows thermal desorption of Sorbent Pens directly into a GC or GCMS to allow dramatically improved recovery, consistency, and easy of maintenance. Watch for a new wave of applications coming out in 2019-2020 using the SPR40 Robotic inlet.

Our unmatched Silonite™ surface coatings continue to be perfected, resulting in the most consistent, durable, and inert coatings available for GC inlet systems and for mercury vapor handling without surface interactions. Silonite™ surface treatments play a vital role in achieving our ultimate goal; to provide our customers with complete solutions for "analytical grade" VOC and SVOC handling and inlet systems that can sample, store, and recover virtually all GCMS compatible compounds.

Finally, for US EPA Method TO-15 and China HJ-759, Entech is proud to be the only supplier that manufacturers and supports the complete solution for sampling and analysis of airborne contaminants using Silonite™ coated stainless steel canisters. Entech has assembled an extraordinary and talented team of Chemists and Service Engineers with a combined knowledge of over 200 years of laboratory and field experience – to provide our clients with premier customer service and on-site support. To our valued customers we would like to say thank you for your patronage through the years and we look forward to servicing your analytical needs for many years to come.

Sincerely,
Daniel B. Cardin – President

Entech Instruments is a leading developer and manufacturer of analytical instrumentation that supports professionals around the world in the Environmental, Industrial Hygiene, Food & Beverage, Product Testing, Forensics, and Clinical Analysis markets.

To provide solutions for such a diverse set of industry applications, Entech has assembled an extraordinary and talented team – a combined knowledge of over 200 years of laboratory and field experience – to provide our clients with premier customer service and on-site support. We invite you to share your application challenges and requirements so we can create a customized solution just for you.

~ The Entech Team

Meeting the Demands of the New Global Volatiles Market

With extreme air pollution events on the rise and more conclusive epidemiological data linking ambient VOC exposure to disease, global efforts to reduce pollution and its effects on health are driving aggressive testing and containment policies across developed and developing nations. Increasing government intervention will see demand for testing services across all categories of pollution monitoring rise dramatically, and over the next decade laboratories will be under pressure to increase their analytical throughput. The Entech 7200A Accelerated, Fast GCMS Canister Preconcentrator was specifically designed to meet the need for higher laboratory throughput, drawing on over 3 decades of preconcentrator optimization through Entech's delivery and support of thousands of canister preconcentration systems world-wide. All of this feedback and innovation has resulted in the fasted and most comprehensive volatiles preconcentrator on the planet, bar none.

EFIT - Time is On Your Side with the 7200A

With EFIT (Extremely Fast Injection Technology), the sample is deposited on the column in less than 1 second, producing 1.4 - 2 second wide peaks that both reduce the required resolving power of the column while increasing centroid signal intensity. The entire suite of TO-15A compounds typically elutes within 8-9 minutes, with equal or greater separation than with prior technology simply because peak widths are under 2 seconds rather than being 5-7 seconds wide. The 7200A with EFIT creates a whole new standard of productivity for laboratories needing to optimize their sample throughput.

Doubling your throughput is like someone giving you a free GC-MS, as well as another free preconcentrator, since one system can generate the data of 2 systems. Would you spend another $2-3 in LN2 to allow you to run another sample without the space or cost of another GCMS? Whether you are a contract lab or an agency needing to improve efficiency, faster throughput simply makes good sense.

Features of the Fast GC-MS 7200A LN2 3-Stage Preconcentrator

Extremely Fast Injection Technology (EFIT)
Extremely Fast Injection Technology (EFIT) that reduces bandwidth to 1 second or less on column.

Much shorter run times and cycle times = Higher Productivity
Cycle times injection to injection as short at 20-25 minutes for a 250mL sample size.

Complete elution of TO15 compounds in under 10 minutes, with column bakeout done in just 2-3 additional minutes

Up to 30% reduction in LN2 consumption as compared to prior Entech preconcentrators (7100A, 7200)

Lower carryover by optimizing Silonite coated flowpath temperatures and M3 bakeout timing

Superior Water Management (3-5x better than 7200) reduces impact on GCMS, and prevents MS signal loss even when doubling the number of injections per hour, per day.

Less column bleed resulting in better baselines and fewer source cleanings

Advanced software that improves the user experience

Better Autosampler Options:
- *7016D Classic 6L Canister 16-Position*

Autosampler
- *7650-M for soil gas analysis and screening*
- *New SkyCan Rail Autosampler high productivity ambient or source level canister analysis*

Features & Capabilities	7200A
Accelerated Analysis	✔
Microscale Purge & Trap	✔
Extended Cold Trap Dehydration	✔
Automated Standards Addition	✔
High CO$_2$ Samples	✔
Accu-Sample Technology	✔
Digital Valve Isolation	✔
Loop Injection Valve	Yes - Included (0.5-2cc) 1cc Typical
Pressure/Vacuum Leak Test Prior to Opening	✔
Built-In Sample Ports	4
Direct Volume Measurement (no MFCs)	✔

7200Accelerated and Agilent GC-MS, 7890B/5977A

Abundance

TIC: 1801002_83.D\data.ms
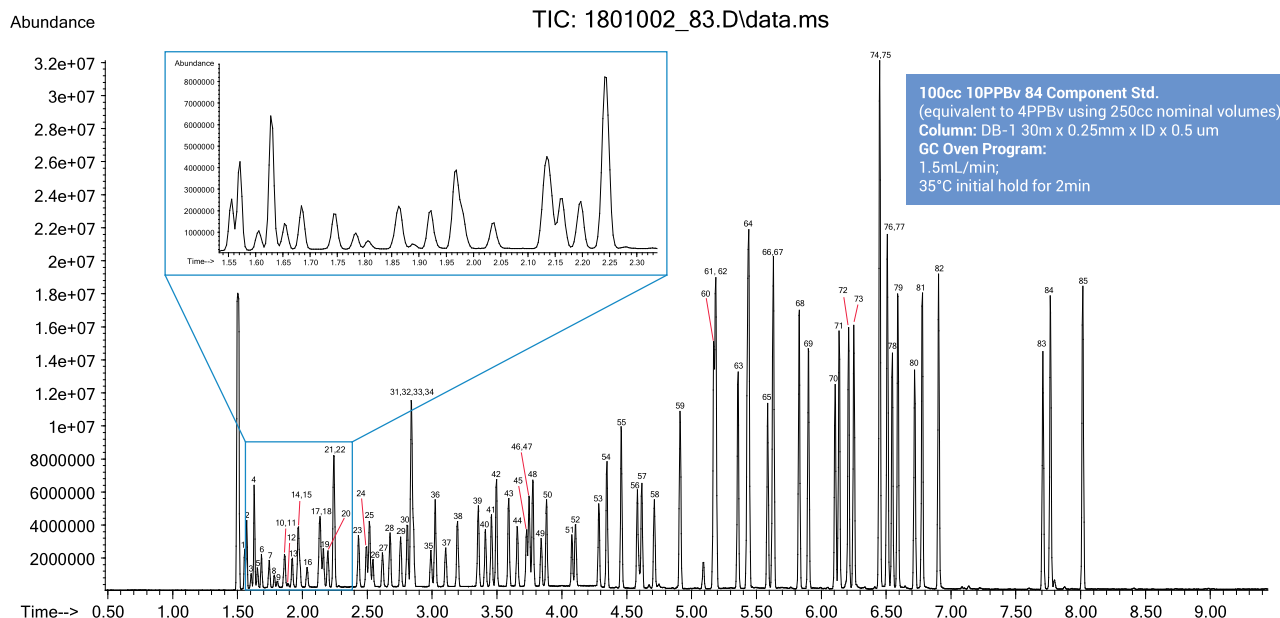
100cc 10PPBv 84 Component Std.
(equivalent to 4PPBv using 250cc nominal volumes)
Column: DB-1 30m x 0.25mm x ID x 0.5 um
GC Oven Program:
1.5mL/min;
35°C initial hold for 2min

1. Propene	18. tert-Butanol	35. Tetrahydrofuran	52. 4-Methyl-2-pentanone	69. 4-Bromofluorobenzene
2. Dichloro difluorobenzene	19. Methylene Chloride	36. Ethyl tert-butyl ether	53. trans-1,3-Dichloropropene	70. Cumene
3. Chloromethane	20. Allyl Chloride	37. 1,2-Dichloroethane	54. 1,1,2-Trichloroethane	71. O-Chlorotoluene
4. 1,2 - Dichloro - 1,1,2,2 - tetrafluorobenzene	21. Trichlorotrifluoroethane	38. 1,1,1-Trichloroethane	55. Toluene	72. n-Propylbenzene
5. Vinyl chloride	22. Carbon Disulfide	39. Benzene	56. 2-Hexanone	73. 4-Ethyltoluene
6. 1,3-Butadiene	23. trans-1,2-Dichloroethene	40. Carbon tetrachloride	57. Dibromochloromethane	74. 1,3,5-Trimethylbenzene
7. Bromomethane	24. 1,1-Dichloroethane	41. Cyclohexane	58. 1,2-Dibromoethane	75. tert-Butylbenzene
8. Chloroethane	25. Methyl tert-butyl ether	42. 1,4-Difluorobenzene (ISTD)	59. Tetrachloroethylene	76. 1,2,4-Trimethylbenzene
9. Ethanol	26. Vinyl acetate	43. Tert-amyl methyl ether	60. 1,2-Chlorobenzene -d5 (ISTD)	77. Benzyl Chloride
10. Acetonitrile	27. 2-Butanone	44. 1,2-Dichloropopane	61. 1,1,1,2-Tetrachloroethane	78. 1,3-Dichlorobenzene
11. Bromoethene	28. 2-Chloroprene	45. Bromodichloromethane	62. Chlorobenzene	79. 1,4-Dichlorobenzene
12. Acrolein	29. CIS- 1,2-Dichloroethene	46. 1,4-Dioxane	63. Ethylbenzene	80. Sec-butylbenzene
13. Acetone	30. Bromochloromethane (ISTD)	47. Trichloroethylene	64. m,p-Xylenes	81. 1,2-Dichlorobenzene
14. Trichlorofluoromethane	31. Hexane	48. 2,2,4-Trimethylpentane	65. Bromoform	82. O-Cymene
15. Isopropyl alcohol	32. Diisopropyl ether	49. Methyl methacrylate	66. Styrene	83. n-Butylbenzene
16. Acrylonitrile	33. Chloro form	50. Heptane	67. 1,1,2,2-Tetrachloroethane	84. 1,2,4-Trichlorobenzene
17. 1,1-Dichloroethene	34. Ethyl acetate	51. CIS-1,3-Dichloropropene	68. O-Xylene	85. Naphthalene
				86. Hexachlorobutadiene

Description	Unit	Part #
7200A Accelerated Preconcentrators		
Instruments and Options:		
7200A Accelerated VOC Preconcentrator (includes loop valve) 120VAC/60Hz	EA	7200A-01
7200A Accelerated VOC Preconcentrator (includes loop valve) 240VAC/50Hz	EA	7200A-01-HV
7200A Accelerated VOC Preconcentrator w/Silonite Coated Flow Path (includes loop valve) 120VAC/60Hz	EA	7200A-01S
7200A Accelerated VOC Preconcentrator w/Silonite Coated Flow Path (includes loop valve) 240VAC/50Hz	EA	7200A-01S-HV
7200 Empty Silonite-D™ Trap**	EA	7200-T1
7200 ⅛" Glass Bead Trap**	EA	7200-T2
7200 Tenax® TA Trap**	EA	7200-T3
7200 Tenax® Plus ⅛" Glass Bead Trap**	EA	7200-T4
7200CTS Hydrocarbon Trap**	EA	04-25005
Silonite-D™ 3 Valve Flow Path	EA	90-72113
7200 Sample Trap Heater Assembly	EA	09-7200-00
7200 4 Canister Heated Inlet Line	EA	09-33303
48" 7200A GC transfer line heater	EA	09-33008A
54" 7200A GC transfer line heater	EA	09-33008A-045
72" 7200A GC transfer line heater	EA	09-33008A-06
6890 / 7890 Remote Start Cable	EA	12-31097
1-Stage Diaphragm Pump	EA	10-20010
1-Stg. Diaphragm Pmp. 240VAC/50Hz	EA	10-20014

Description	Unit	Part #
7200 Replacement Parts:		
Silonite-D™ 2 Valve Flow Path	EA	90-72112
7200 GC Transfer Line Heater	EA	09-33008
SL2A Unicard	EA	11-22024

** Configure the 7200's traps for your application. Contact Entech for more info.

7200A | 7650-M, MillionAir™ System.

MillionAir™
Advanced injection control
10⁶ Concentration Range without Dilution