

CSN011 Version 3 May 2020



Customer Support Note 011

Recording inlet total flow on Agilent 7890 GC

Disclaimer: It is vital that this Customer Support Note is read carefully before proceeding and that any instructions contained within the document are followed closely. Markes International will not accept responsibility for any damage done to instrumentation or personnel if any instructions within this document are not followed exactly. Any ongoing warranty or contract may be voided if failure to follow these instructions results in damage to the instrumentation. If anything is unclear, you must clarify the details with a Markes representative before proceeding.

A useful diagnostic tool when evaluating thermal desorption data is to monitor the total flow supplied by the SSL EPC unit of the Agilent 7890 GC during injection of the sample from the focusing trap (trap fire). Any variability or instability of flow at this stage of the thermal desorption cycle will reflect non-reproducibility of split flow and potential for poor sample data precision.

The total flow can be recorded as a separate signal to the detector output, and therefore will appear as a separate window in ChemStation/MassHunter Data Analysis when the file is opened. As a result, multiple files can be overlaid and total flow readings compared across samples.

1. Recording inlet total flow on Agilent 7890 GC in ChemStation

1.1 Configuring ChemStation Data Acquisition

• Click on the 'Signals' section of the 'GC Edit Parameters' window, and select the inlet that is supplying the gas. Select the total flow signal:





Markes International Ltd T: +44 (0)1443 230935 F: +44 (0)1443 231531 E: enquiries@markes.com • Ensure there is a zero-minute solvent delay set up in the MS SIM/Scan Parameters window (this ensures that data is collected at the time of injection (time = 0 min)):

MS SIM/Scan Parameters	×
MS Instrument	Real-Time Plot
Sample Inlet: GC	Time <u>W</u> indow: 10 min.
Solvent <u>D</u> elay: 0.00 min. <u>E</u> MV Mode: Relative ▼ Belative Voltage: 0 = 1200 V	MS Window 1 Plot Type: Total Y-Scale: 0 to 2000000
Acq. Mode: Scan	MS Window 2
	Plot Type: Spectrum Y-Scale: 0 to 100000
- Tune File ATUNE.U	
Valid entries are whole values between -1200 and 1800. Agilent r	ecommends using Gain Factor mode.
Scan Parameters Zones	<u>I</u> imed Events
OK Cancel	Help

• Save the method before proceeding to run any samples.

1.2 Viewing the file in ChemStation Data Analysis

• Open the ChemStation file in 'Data Analysis' as normal. There will now be two windows on the screen:



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 When the files are overlaid, a maximum of two signal windows will be overlaid. If there is a 'SIM + Scan MS' method for instance, the two desired signals to be overlaid must be selected in each data file before the overlay process (File > Select Signals).

2. Recording inlet total flow on Agilent 7890 GC in MassHunter

• To configure MassHunter Data Acquisition, click on the signals section of the GC Edit Parameters window and select the inlet that is supplying the gas. Select the total flow signal:

	Back Inl 80 2.7 230	let Flow F ock SS Inlet psi (7.7 ps o *C (230 *C	Column #1 50*C(50*C) 1 mL/min	MSD			ر م م	00			_	-		-	_				- Oven: *C* - Thermal Aux 2: *
							•	0 0 2ptions	2	4	6	8	10 Run Time, mi	12 n	14	16	18	20	
ALS																			♥ Qptions
Valves		Dual	Signal Source		Data Rate / Min Pea	k Width	Zero	Save											
MMI - Front	T	8	#1: Diagnostics: Back Inlet (55	(nlet): Pres: *	50 Hz / 0.004 min		10		_										
SSL - Back		8	#2: Diagnostics: Back Inlet (55	(niet): Flow •	50 Hz / 0.004 min		10												
Columns		в	None		50 Hz / 0.004 min		10		_										
Oven		8	Front Signal (FID)		50 Hz / 0.004 min		10												
Aux Heaters Events		Hide D	Diagnostics +	Test Pli Ambier	ot nt Pressure														
Signals		Signal E	vent Table (Choose a detector signal a	Oven	•			_											
Configuration	Delete		Signal Source Tin	Front I	ntet (MM Intet)	Pressur	0	· 🗆											
Columns	Events	24	•	Back In	let (55 inlet)	Flow	1	•	Ictual										
Modules				Column		R2 Pres	sure		etpoint PW										
ALS				Front D	etector (FID)	Temper	ature	- :	DC actual										
Backflush				PCM B					un seipont										
Readiness				-				-	and clear										
GC Calculators		1																	

• Ensure there is a zero-minute solvent delay set up in the MS Method Editor window (this ensures that data is collected at the time of injection (time = 0 min)):

ATUNE.U	Browse	<u>R</u> un Time 10.00 min
Tune Type	El	Solvent Delay 0.00 min
Tune EMV	1200	Detector Setting
CI Gas Valve:		Trace Ion Detection
CI Flow:	%	EM Setting: Gain Factor
A	Actual Setpoint	Gain Easter 1 000
MS Source	Offline 230	
MS Quad	Offline 150 Apply	Applied EM Voltage (V) 500

• To view the total flow signal, follow the steps outlined in Section 1.2.

For all technical support queries, please contact Markes International.

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