ENTECH INSTRUMENTS

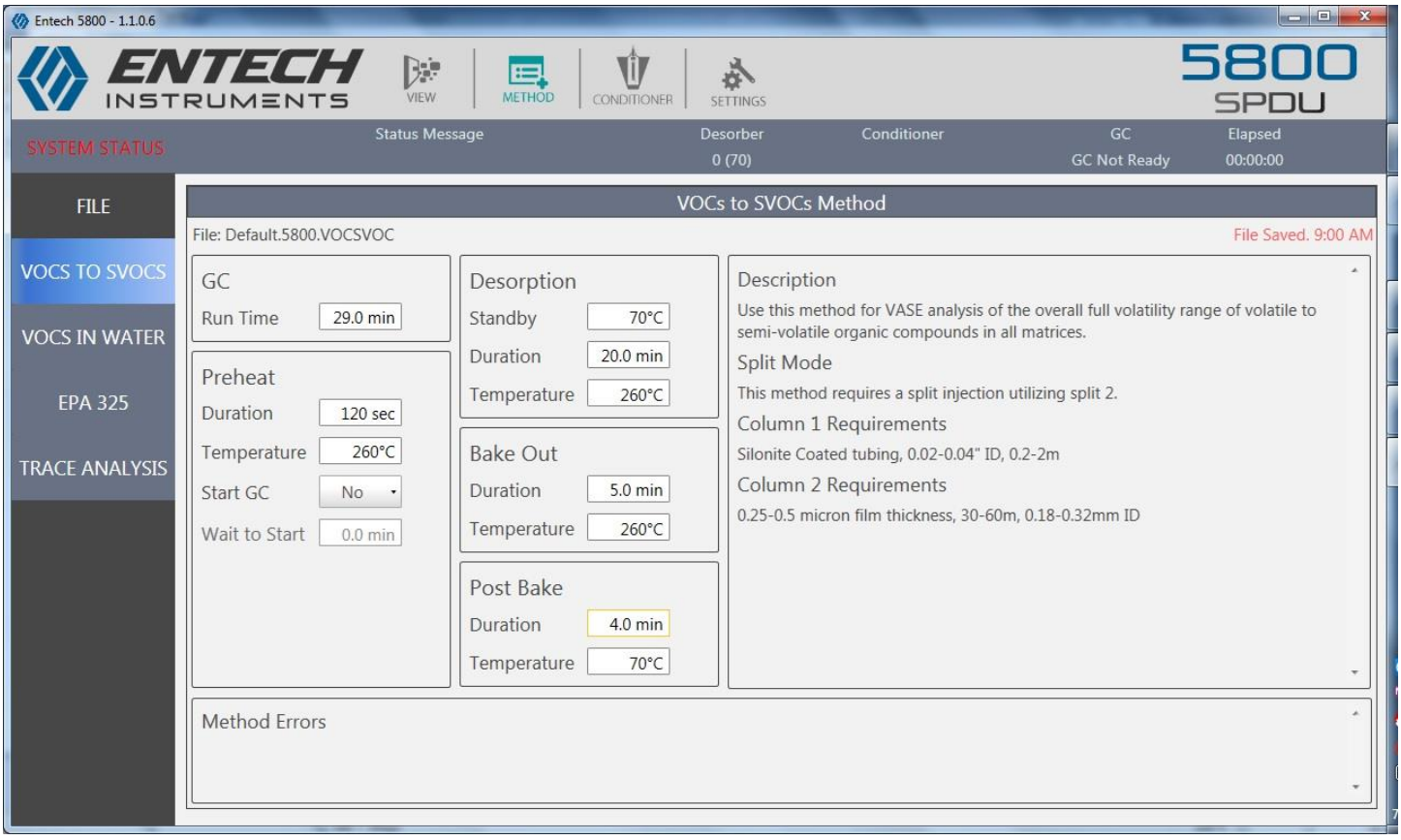
Technical Notes:
Sorbent Pen Default Method Conditions for GC and 5800

DESCRIPTION: SORBENT PEN DEFAULT METHOD CONDITIONS FOR THE GC AND 5800		DOC.#: 5800-800-V02-DEFAULTMETHODCONDITIONS-C.DOCX	REV.: 02	APPROVAL:	ORIGINATOR: TIM RAUB
FILE:		ISSUE DATE:		DEPARTMENT: SERVICE	
REV.: 00	DATE: 10JAN2017	INITIALS: TTR	DESCRIPTION: Document created.		
REV.: 01	DATE: 10FEB2017	INITIALS: TTR	DESCRIPTION: UPDATED CONDITIONS		
REV.: 02	DATE: 21JJUL2017	INITIALS: TTR	DESCRIPTION: UPDATED CONDITIONS.		

Background:

The Purpose of the conditions below is to provide a set of conditions to be used as a starting point during installation, or if method development goes in the wrong direction, or if method conditions are lost due to the failure to back up the instrument's computer. These conditions should work reasonably well and were generated during Method Development at Entech.

5800 Default VOCs to SVOCs Method Conditions:



Technical Notes:
Sorbent Pen Default Method Conditions for GC and 5800

Use this method for VASE analysis of the overall full volatility range of volatile to semi-volatile organic compounds in any matrix, liquid or solid. Examples include compositional analysis of food and beverages, fragrances, aromas, odors, and contaminants. Light to heavy compounds may be analyzed with great sensitivity and virtually no carryover. A mass spectrometer is the recommended detector.

Default GC Method:

Pre-column: Entech Silonite® Coated tubing, 0.04" ID x 24" length
Primary Column: HP-5MS 30 m L X 0.25 mm ID X 0.5 µm film thickness
Split Mode: Split, 30:1 ratio
Column Flow: 1.5 ml/min

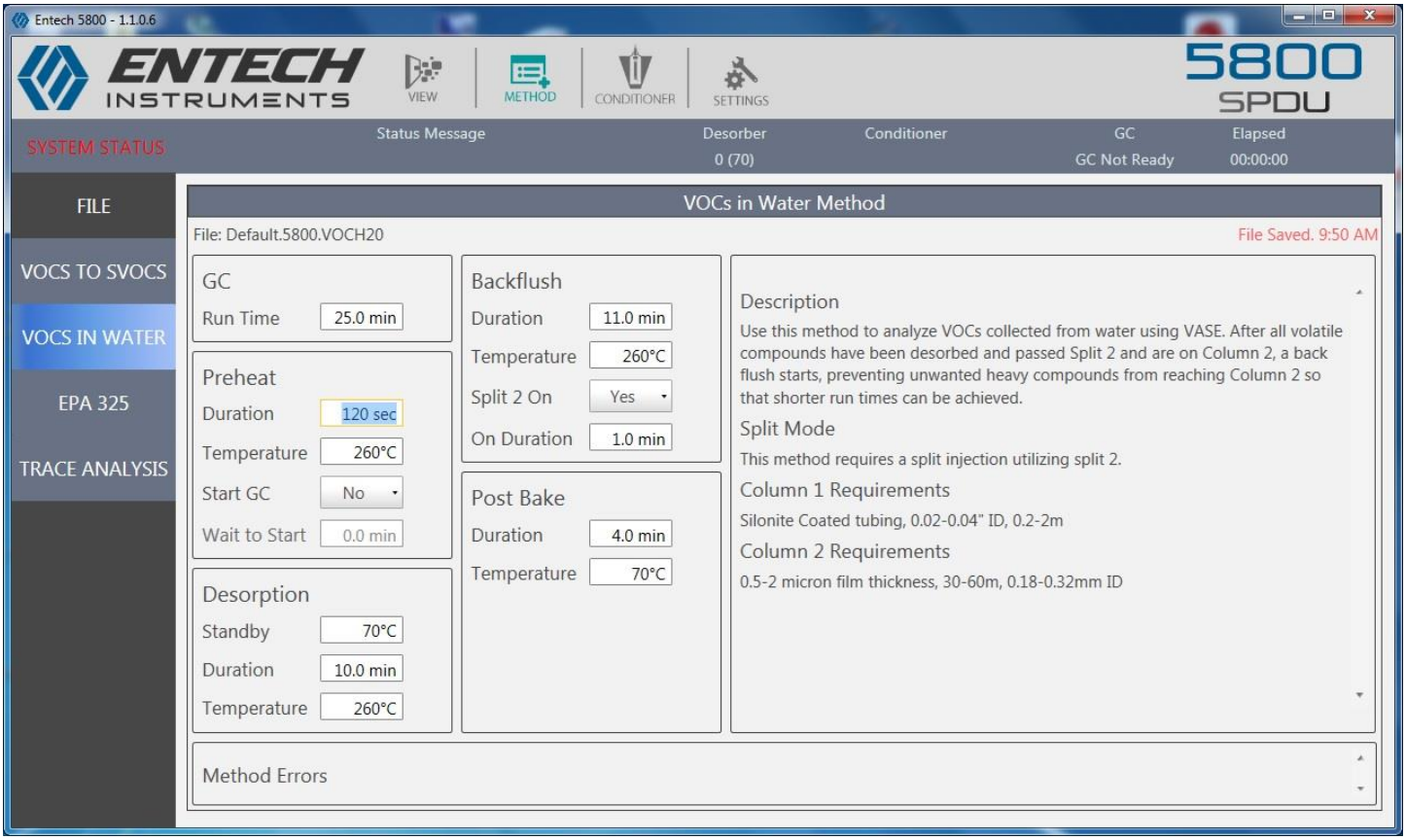
Oven Program:

Rate (° C/min)	Temp (° C)	Hold Time (min)
	35	5
10	150	0
20	300	5
		Total Run Time: 29 minutes

AUX (MSD transfer line) temperature: 230^0 C

Default VOCs in Water Method Conditions:

Technical Notes:
Sorbent Pen Default Method Conditions for GC and 5800



Method Description: Use this method to analyze VOCs collected from water using VASE. A mass spectrometer is the recommended detector.

Default GC Method:

Pre-column: Entech Silonite® Coated tubing, 0.04" ID x 24" length
Primary Column: HP-5MS 30 m L x 0.25 mm ID X 0.5 µm film thickness
Split Mode: Split, 30:1 ratio
Column Flow: 1.5 mL/min

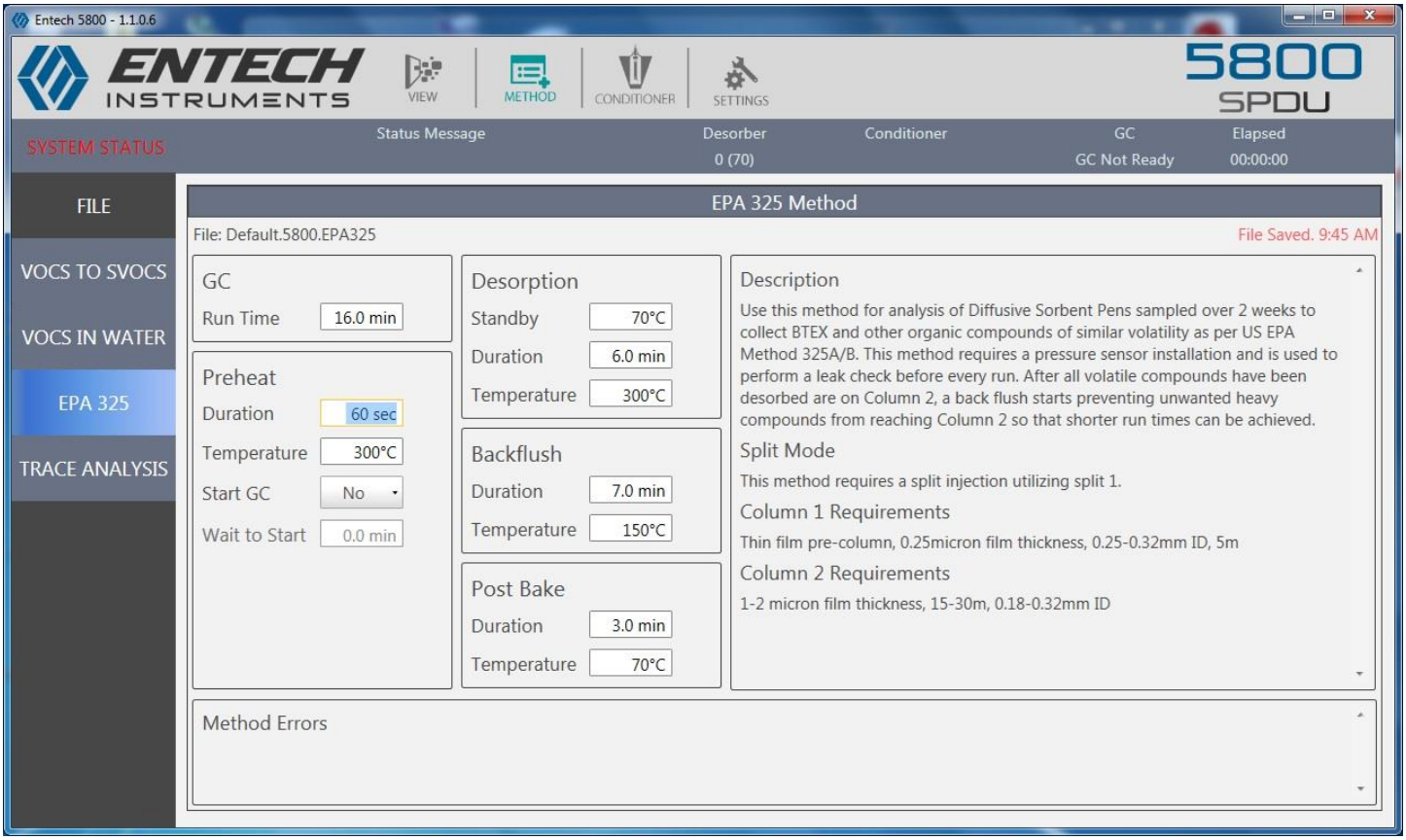
Oven Program:

Rate (° C/min)	Temp (° C)	Hold Time (min)
	35	5
10	150	0
25	250	4.5
		Total Run Time: 25 minutes

AUX (MSD transfer line) temperature: 200^{0}C

5800 Default EPA Method 325 Method Conditions:

Technical Notes:
Sorbent Pen Default Method Conditions for GC and 5800



Method Description: Use this method for analysis of Diffusive Sorbent Pens sampled over 2 weeks to collect BTEX and other organic compounds of similar volatility as per US EPA Method 325A/B. This method requires a pressure sensor installation and is used to perform a leak check before every run. After all volatile compounds have been desorbed are on Column 2, a back flush starts preventing unwanted heavy compounds from reaching Column 2 so that shorter run times can be achieved. The detector can be MS or FID.

Default GC Method:

Pre-column: DB1 5 m L X 0.530 mm ID X 0.5 µm film thickness
Primary Column: DB1 60 m X 0.32 mm X 1 µm film thickness
Splitless/Split Mode: Split at 0.01 min; 25:1 ratio
Column Flow: 2 mL/min

Oven Program:

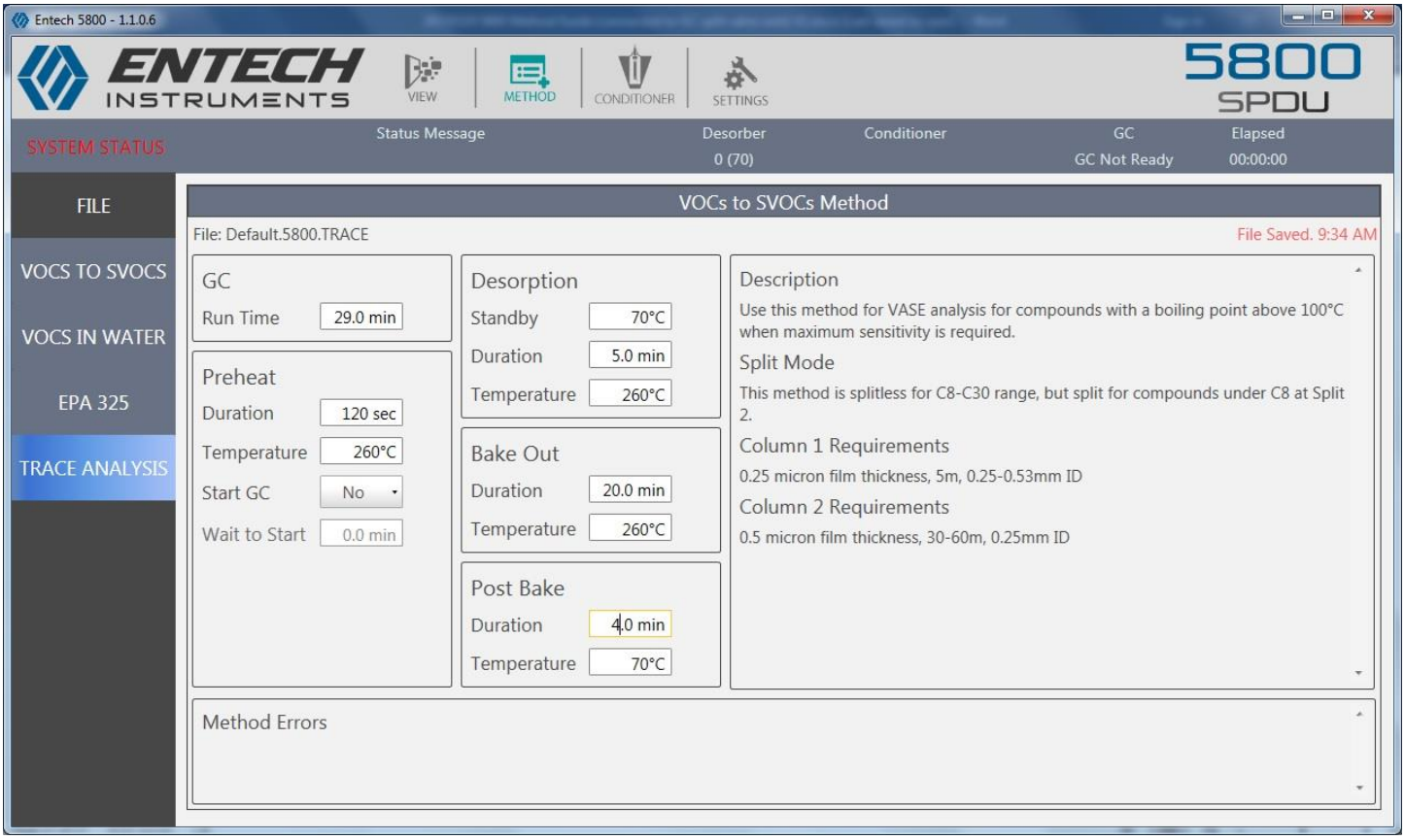
Rate (° C/min)	Temp (° C)	Hold Time (min)
	35	3
35	170	0
5	190	0
35	210	4.5

Technical Notes:
Sorbent Pen Default Method Conditions for GC and 5800

Total Run Time: 16 minutes

AUX (MSD transfer line) temperature: 180^{0}C

Default 5800 Trace Analysis Method Conditions:



Method Description: Use this method for VASE analysis for compounds with a boiling point above 100°C when maximum sensitivity is required. A mass spectrometer is the recommended detector. Examples include ultra-trace level analysis, geosmin, 2-MIB, TCA, THC.

Default GC Method:

Pre-column: DB1 5 m x 0.530 mm, 0.5 µm film thickness
Primary Column: 30 m x 0.25 mm HP5MS, 0.5 µm film thickness
Split Mode: Split, 10:1 ratio
Column Flow: 1.5mL/min

Oven Program:

Rate (° C/min)	Temp (° C)	Hold Time (min)
	35	5
25	160	0

Technical Notes:
Sorbent Pen Default Method Conditions for GC and 5800

10	300	5
		Total Run Time: 29 minutes

AUX (MSD transfer line) temperature: 230^0C