

## Customer Support Note 004

# Bake-out method for UNITY and autosamplers

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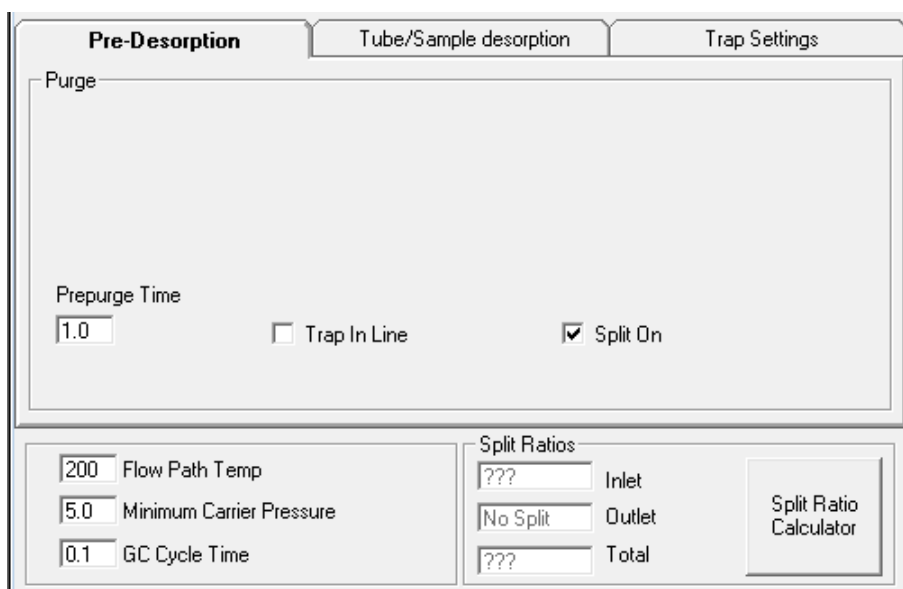
This document details the procedure designed to bake-out the thermal desorption (TD) system and clean the system flow path.

## 1. Maverick software

### 1.1 TD method

Set up the TD method as shown below, and save it as the 'Bake-out method' for future use. The software shown is version 5.x.x, but the parameters will be the same for each type of software.

**NOTE:** If your tubes or cold trap contain Chromosorb or Porapak, then the temperature will need to be reduced to avoid damaging the sorbents.

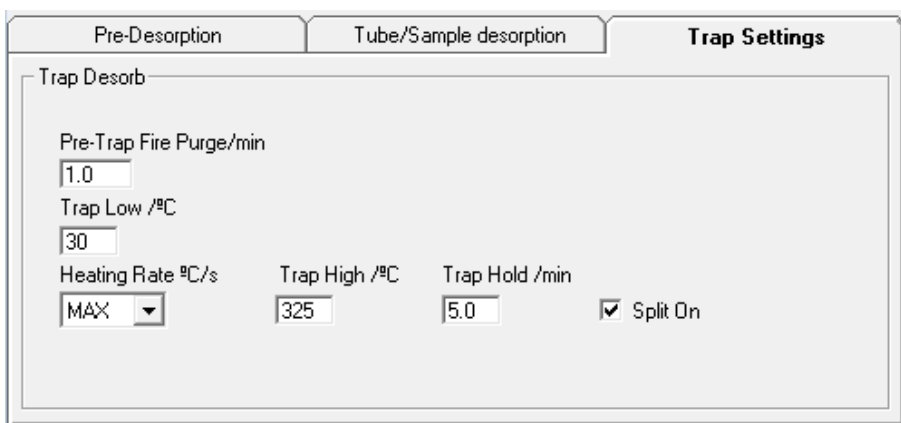


Pre-Desorption	Tube/Sample desorption	Trap Settings
Purge		
Prepurge Time	<input type="checkbox"/> Trap In Line	<input checked="" type="checkbox"/> Split On
200 Flow Path Temp	Split Ratios	
5.0 Minimum Carrier Pressure	???	Inlet
0.1 GC Cycle Time	No Split	Outlet
	???	Total
	Split Ratio Calculator	

**Figure 1:** Method panel showing 'Pre-Desorption' tab.



**Figure 2:** Method panel showing 'Tube/Sample Desorption' tab.



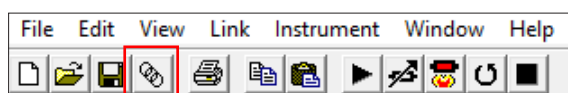
**Figure 3:** Method panel showing 'Trap Settings'.

## 1.2 Set the gas flows

The desorption and split flows will need to be set to 50 mL/min. If your TD system has MFCs then you can set this in the method panels above. Alternatively, you can set these manually using a flowmeter and the needle valves.

## 1.3 Link the method

If using a UNITY 1 or UNITY 2, please select the 'Link Method' icon on the toolbar:



**Figure 4:** 'Link Method' icon in the toolbar.

If using an ULTRA or TD100, then this step is unnecessary.

## 1.4 Build the sequence

Add a sample tube to run and select the 'Bake-out method' created above. Select the tick-box next to the 'Recycle' option, outlined in red. This will run the method continuously until you stop the sequence.



**Figure 5:** Sequence builder.

## 1.5 Set up the system

Load an empty or blank sample tube into the system. Set up the GC(-MS) software to run at least 40 recycles, preferably overnight. This will allow the system to bake-out and remove contamination overnight.

## 2. MIC software

### 2.1 TD method

Set up the TD method as shown below, and save it as the 'Bake-out method' for future use. The software shown is version 2.x.x, but the parameters will be the same for each type of software.

**NOTE:** If your tubes or cold trap contain Chromosorb or Porapak, then the temperature will need to be reduced to avoid damaging the sorbents.

The screenshot shows a software interface for method configuration. It is divided into two main sections: 'General' and 'Pre-desorption'.

**General section:**

- 'Apply presets for:' is set to 'Default'.
- 'Standby split on' is checked.
- 'Flow path temperature (°C)' is set to 200.
- 'Overlap' is checked.
- 'GC cycle time (min)' is set to 0.1.
- 'Minimum carrier pressure (psi)' is set to 5.

**Pre-desorption section:**

- 'Prepurge' is selected with a radio button.
- 'Prepurge time (min)' is set to 1.0.
- 'Trap In line' is unchecked.
- 'Trap flow (mL/min)' is set to 50.
- 'Split on' is checked.
- 'Split flow (mL/min)' is set to 50.

**Figure 6:** Method panel showing 'General presets' and 'Pre-Desorption' tabs.

The screenshot shows the 'Tube desorption' tab of the software interface.

- 'Desorb time 1 (min)' is set to 10.0.
- 'Desorb temperature 1 (°C)' is set to 320.
- 'Trap In line' is unchecked.
- 'Trap flow (mL/min)' is set to 50.
- 'Split on' is checked.
- 'Split flow (mL/min)' is set to 50.

**Figure 7:** Method panel showing 'Tube Desorption' tab.

Parameter	Value
Desorb trap	<input checked="" type="checkbox"/>
Trap purge time (min)	1.0
Trap purge flow (mL/min)	50
Trap low temperature (°C)	30
Elevated trap purge	<input type="checkbox"/>
Elevated trap purge temperature (°C)	25
Trap heating rate (°C/s)	MAX
Trap high temperature (°C)	325
Trap desorb time (min)	5.0
Desorb split on	<input checked="" type="checkbox"/>
Split flow (mL/min)	50

**Figure 8:** Method panel showing 'Trap Settings'.

## 2.2 Set the gas flows

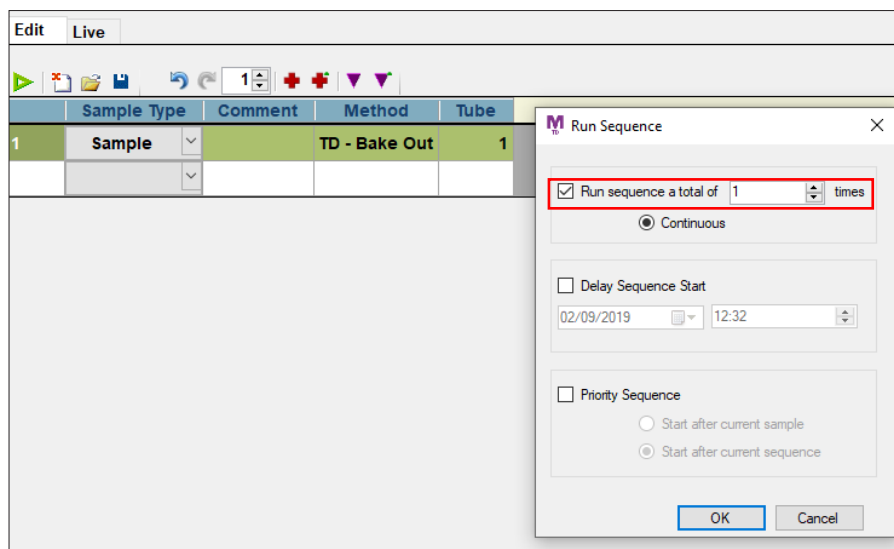
The desorption and split flows will need to be set to 50 mL/min. If your TD system has MFCs, then you can set this in the method panels above. Alternatively, you can set these manually using a flowmeter and the needle valves.

## 2.3 Set up the system

Load an empty or blank sample tube into the system. Set up the GC(-MS) software to run at least 40 cycles, preferably overnight. This will allow the system to bake-out and remove contamination overnight.

## 2.4 Build the sequence

Add a sample tube to run and select the 'Bake-out method' created above. Press 'Play', then tick 'Run sequence a total of', and select 'Continuous'. This will run the method continuously until you stop the sequence.



**Figure 9:** Sequence builder.

**For all technical support queries, please contact Markes International.**

Email: [support@markes.com](mailto:support@markes.com) Tel.: +44 (0)1443 233922