Agilent Technologies

Keeping the ECD at high temperature like 350 degrees or above with anode purge and make up gas running for prolonged period is called Thermal cleaning.Normally the column is removed and in place of it it is blocked using the blanking nut and ferrule.

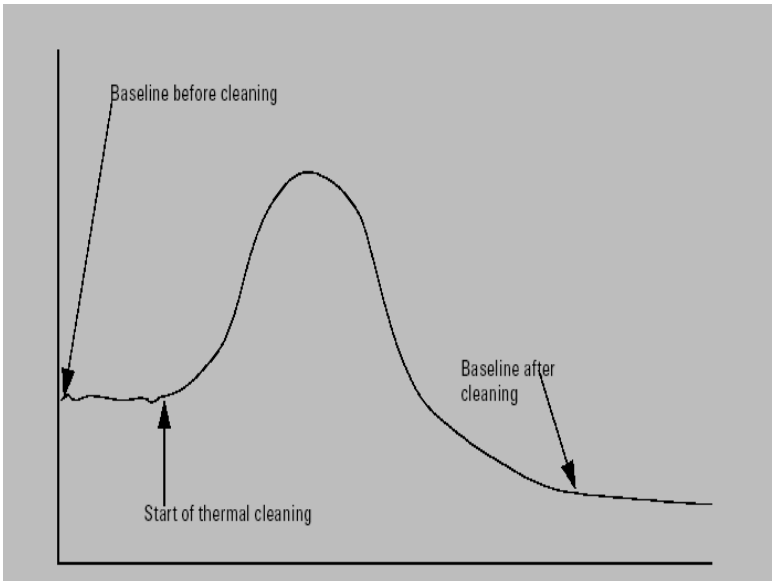
If your ECD baseline is noisy or the display frequency is too high (i.e., ≥100), you should perform a thermal cleaning (also called a “bakeout”) of the detector. Before performing a bakeout, verify that the carrier supply and makeup gas and flow system are leak- and contaminant-free.

Caution Detector disassembly and/or cleaning procedures other than thermal should be performed only by personnel trained and licensed appropriately to handle radioactive materials. Trace amounts of radioactive 63Ni may be removed during these other procedures, causing possible hazardous exposure to β- and x-radiation (bremsstrahlung).

WARNING To prevent possible hazardous contamination of the area with radioactive material, the detector exhaust vent must always be connected to a fume hood,or otherwise vented in compliance with the latest revision of Title 10, CFR, Part 20, or with state regulations with which the Nuclear Regulatory Commission has entered into an agreement (USA only). For other countries, consult with the appropriate agency for equivalent requirements.

1. Record the ECD “Output” value from the GC display. If the number is equal to or greater than 100, continue with this procedure.
2. Turn off the anode purge and makeup gas flows.
3. Remove the column from the detector.
4. Cap the bottom of the makeup gas adapter with a blank column ferrule and column nut.
5. Set the makeup gas flow rate between 50 and 60 mL/min. Set the detector temperature between 350 and 375° C.
6. Set the oven temperature to 250° C.
7. Allow thermal cleaning to continue for several hours, preferably overnight and then cool the system to normal operating temperatures.
8. Check the ECD “ output” value from the GC display. It should be lower than the first reading.

It is good practice to monitor the progress of the thermal cleaning by plotting the ECD signal. Over time, the signal baseline signal should change as shown in Figure


Baseline before cleaning
Baseline after cleaning
Start of thermal cleaning