

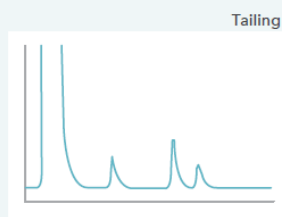


عیب یابی در GC

مشکل شماره ۶: دنباله دار شدن پیکها (Peak tailing)

Tailing Moderate to severe asymmetry towards the back or right side of the peak.

Symptom



Possible Cause

Contaminated inlet liner or column.

Activity in the inlet liner or column if the missing peak is an active compound.

Dead volume due to poorly installed liner or column.

Ragged column end.

Solvent-phase mismatch.

A cold region in the sample flow path.

Column or inlet liner temperature is too low for tailing hydrocarbons.

Debris in the liner or column.

Injection takes too long.

Split ratio is too low.

Overloading the inlet.

Some types of compounds such as alcoholic amines, primary and secondary amines, and carboxylic acids tend to tail.

Suggested Remedy

Clean or replace inlet liner. Bake column.

Clean or replace the inlet liner. Ensure an inert column is used. If necessary, replace the column.

Confirm by injecting inert peak methane; if it tails, column is not properly installed. Reinstall liner and column as necessary.

Score the tubing lightly with a ceramic scoring wafer before breaking it. Examine the end (a 20-power magnifying glass is recommended). If the break is not clean and the end square, cut the column again. Point the end down while breaking it, and while installing a nut and ferrule, to prevent fragments from entering the column. Reinstall the column.

Change the stationary phase. Usually polar analytes tail on non-polar columns, or dirty columns.

Remove any cold zones in the flow path or check the MS transfer line trap.

Check injector and oven temperature with an accurate thermometer. If accurate, increase temperature as necessary, but do not exceed the maximum temperature limit of the column.

Clean or replace the liner. Cut 4 inches off the end of the column and reinstall it.

Improve injection technique.

Increase split ratio to at least 20:1.

Decrease the sample volume or dilute the sample.

Try a more polar column. Derivatize the sample.