



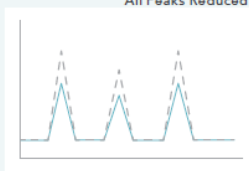
عیب یابی در GC

مشکل شماره ۴: کاهش ارتفاع پیکها

Reduced Size Some or all peaks are reduced in size.

Symptom

All Peaks Reduced



Possible Cause

Defective or plugged syringe.

“Blown” septum or other massive leaks at the inlet or with carrier gas flow. Poor peak shapes usually result from bad leaks.

Purge flow or split ratio too high.

Injector and/or column temperature too low for high molecular weight or low volatility samples.

NPD detector may be coated with silicon dioxide due to column bleed or residual derivatization reagents.

NPD damage by loss of rubidium salt as a result of exposure to overheating, heating in the absence of clean gas flow, or humidity.

For splitless injection, if the split vent is closed for too short a period of time or if the initial column temperature is too high, this may hinder refocusing of the sample.

Detector-sample mismatch.

Inadequate signal amplification.

Sample invalidity.

Suggested Remedy

Try a new or proven syringe.

Find and fix leaks and adjust gas flow.

Adjust gas flow rates.

Increase injector and/or column temperature(s).

Replace the active element. Avoid exposure to silicon-containing compounds.

Replace the active element. Turn off detector whenever the gas flow is interrupted. Avoid overheating. Keep element warm (150 °C) when not in use. Use a desiccator for extended storage.

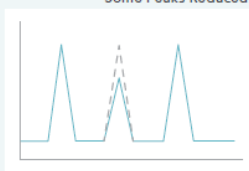
Increase the time the split vent is closed. Decrease the initial column temperature or use a less volatile solvent so that the initial temperature is below the boiling point of the solvent.

Ensure that the detector will respond to the analytes.

Check output signal levels.

Check sample concentration and stability.

Some Peaks Reduced



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

Leak in the injector if the reduced peak is a more volatile compound.

Initial temperature too high for splitless or on-column injections.

Analytes are decomposing or breaking down for active or thermally labile compounds.

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

Find or repair the leaks and adjust gas flow.

Lower the initial column temperature.

Use a higher boiling solvent.

Check the integrity of the sample.

For thermal lability, lower the temperature and use on-column injection, a column with thinner stationary phase, a shorter column lengths, or a higher carrier gas flow rate. For active compounds, ensure an inert column is used. If necessary, replace the column.