

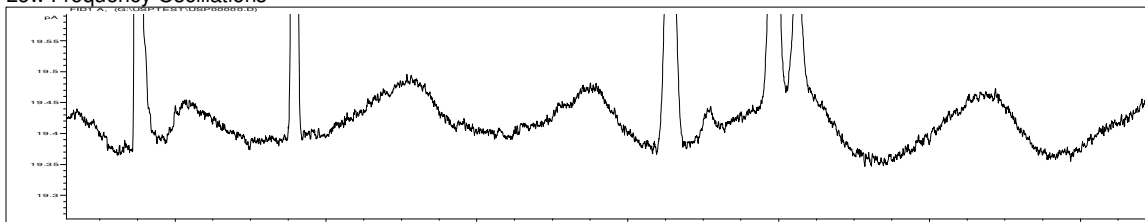
KORY'S GC TECK-TIPS

Baseline Oscillations

Oscillations in baselines can be problematic by both increasing noise levels as well as interfering with quantitation. Oscillations can sometimes be considered noise but occur in a pattern that is slower than typical noise. Looking at the frequency and temperature dependence of the oscillations can help to distinguish the cause of the disturbance.

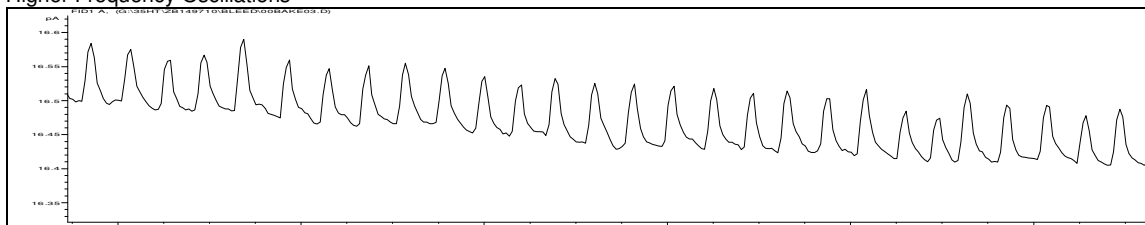
Slower oscillations – Peaks are independent of temperature ramp. Cause is likely due to gas pressure fluctuations. In the below instance, the air compressor would pressurize a storage tank which would increase line pressure resulting in higher flow and cause the signal to rise. Usage decreased the storage tank pressure causing a dip in pressure and flow. Adding a dual stage regulator to minimize pressure fluctuations will help to minimize the problem.

Low Frequency Oscillations



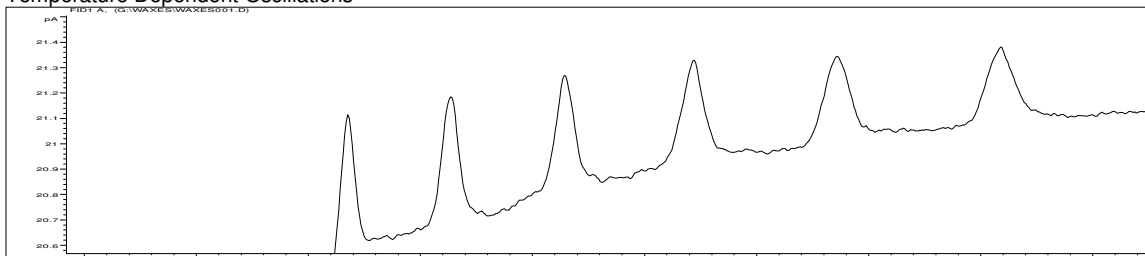
Fast Oscillations – Peaks are evenly spaced and frequency is independent of temperature ramp. The cause is likely detector related. Baking the detector at the maximum temperature (450 °C for FID) for 0.5 to 1.0 hours may provide temporary relief. For a lasting solution, it may be necessary to physically clean the detector.

Higher Frequency Oscillations



Temperature Dependent Oscillations - Peaks frequency is temperature dependant. Faster temperature ramps give more frequent peaks as seen below when reaching an isothermal temperature in the middle of the chromatogram. These peaks are due to contamination that is being introduced onto the column and the column is separating the peaks. The sample or the inlet have been contaminated, likely with siloxanes or hydrocarbons. Changing samples, wash solvents, liner, gold seal, and sometimes syringe may be required to eliminate the contamination.

Temperature Dependent Oscillations



Key words: Noise, baseline, contamination

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