

It is very important for GC users to know how to preserve the GC columns. Proper preservation not only helps in ensuring accurate results, but it also saves you money because it prolongs the life of your GC column. While there are many ways to help prolong the life of your GC column, one of the best methods of GC column preservation is the GC bake out.

### **What is a GC Column Bake Out?**

A GC bake out is a process done to help condition a column by removing high-boiling (volatile) contaminants after you have finished your GC analysis. If these contaminants are not removed, they tend to build up over time and might damage the GC column, which has direct impact on GC column lifetime.

These contaminants can also affect your GC column performance. The presence of these contaminants can result in the presence of ghost peaks, peak tailing, and other peak issues. Contaminants cause noisy baseline.

GC column bake out is only recommended for volatile or semi-volatile contaminants. If your contaminants are non-volatile, you will need to use other methods, such as cleaning the injector or performing a solvent rinse, to remove those contaminants.

## How to Perform a GC Column Bake Out

During a GC column bake out, you will raise the temperature of the column to a level that will remove volatile contaminants. The higher the upper temperature limits of the column, the more contaminants you can remove through a bake out. You will also want to use a phase that has a higher thermal stability, so that you can safely do a GC column bake out without compromising it.

Timing also matters during a GC column bake out. Ideally, you should run a bake out for a period of 30 minutes to two hours to ensure that all contaminants are removed. Keep an eye on the detector baseline during the bake out. Once it is clear of contamination peaks, your bake out is done.

## Plan Ahead for a GC Bake Out

When planning your GC column bake out, consider the needs of your bake out. For example, if you are developing a method for pesticides that requires a 300°C temperature and there is flexibility as to what phase you use, you can consider using a compatible phase that has an upper temperature limit of 360°C. Making a change like this ensures that you can move straight into an effective bake out after your method is complete.

## How Often Should a GC Column Bake Out Be Performed?

Ideally, you should perform a GC column bake out after every method. However, if you find that a GC column bake out after each method is unreasonable in terms of run time, then it is recommended that you do at least one after every 10 injections.

If you have any questions or would like more information about performing a GC bake out or removing contaminants from your GC column, reach out to us today and speak with a one of our technical specialists through our free online portal - **Chat Now**.

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