

## Ghost Buster Column FAQs

### 1. What's the lifetime of GB column?

The longevity of the GB column hinges on various factors, including analysis conditions, solvent brand, and mobile phase purity. When the mobile phase, like water/methanol, is pretty simple and the GB column is handled with care, it can endure for over a year with approximately 3000 injections.

It's advisable to consider replacing the GB column once its trapping efficacy starts to decline.

### 2. What's the cleaning protocol, and how often should we clean the column?

The GB column doesn't require specific washing procedures since impurity adsorption is irreversible.

### 3. Does the GB column work with ion pair reagent mobile phases?

The suitability of using an ion pair mobile phase with a new GB column should be determined through testing, as the sorbent in the GB column may absorb the ion pair reagent.

In many instances, it may not be compatible with mobile phases containing ion pair reagents such as sodium 1-heptanesulfonate or tetrabutylammonium hydroxide. However, there are cases where the GB column might not significantly affect retention and peak shape. In these situations, the GB column could be dedicated solely to the specific ion pair reagent used, and should not be employed with a different ion pair reagent mobile phase.

### 4. Can the GB column handle various types of mobile phases like potassium phosphate, sodium phosphate, ammonium acetate, TFA, formic acid, etc.?

The GB column is compatible with various types of mobile phases, excluding those containing ammonium ions. Other reagents like potassium phosphate, sodium phosphate, trifluoroacetic acid (TFA), formic acid, and similar substances are typically acceptable for use with the GB column.

### 5. Is GB column compatible with 100% aqueous buffers or 100 % organic solvents?

The GB column isn't compatible with 100% aqueous buffers. It's essential to include at least 5%-10% organic phase in the mobile phase. A low percentage of organic phase (<5%) may lead to an unstable baseline. In such cases, the Ghost-Buster II column, 3.0×50mm (P/N 06100-31016), is recommended.

The GB column can indeed be utilized with 100% organic solvents.

### 6. What is the column volume of GB column?

The column volume of the Ghost-Buster HP Column is approximately 60-100 µL, whereas the Ghost-Buster Column has a larger column volume ranging from 500-1400 µL.

### 7. What's pH range of GB column?

The GB column is versatile and can be utilized at any pH range.

## 8. What's the packing materials of GB column?

The packing material within the GB column is a kind of hydrophobic material, enabling it to efficiently and irreversibly capture and retain impurities present in the mobile phase.

## 9. What's the difference between GB and GB II column?

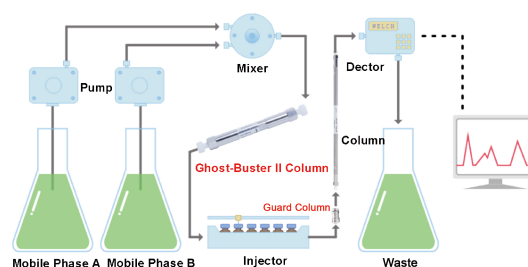
When the initial proportion of the aqueous phase is high, typically exceeding 95%, conventional GB columns effectively remove impurities. However, occasional ghost peaks may persist, especially if there's a sudden drastic change in the mobile phase proportion within a few minutes or if the baseline exhibits significant fluctuations. In response to this challenge, Welch Materials introduced the Ghost-Buster II Column, which features enhanced capabilities to absorb impurities in the mobile phase and eliminate ghost peaks. Through upgrades and improvements, this column addresses baseline drift caused by excessive initial proportions of the aqueous phase in gradient programs, ensuring a stable baseline and reducing the likelihood of baseline fluctuations.

## 10. What's the difference between GB column and Guard column?

1) Both the GB column and Guard column can indeed serve as filters to eliminate solid particles from the mobile phase.

2) GB column is installed **after mixer, before injector**, ensuring it doesn't impact the sample solutions. While Guard column is installed **after injector, before HPLC column**. Its purpose is to shield the HPLC column from strongly retained samples, enhancing column longevity and performance.

3) The packing material within the GB column comprises hydrophobic material, facilitating efficient capture and retention of impurities in the mobile phase. While, the packing material inside the Guard Cartridge is identical to that of the HPLC column, ensuring compatibility and continuity of chromatographic conditions between the Guard column and the analytical column.



## 11. How to select the optimal dimension of a GB column for optimal performance?

HPLC Column	GB Dimension	P/N	HPLC Column	GB Dimension	P/N
2.1×30mm	2.1×33mm	06100-31021	4.6×75mm	4.0×50mm or 4.6×30mm	06100-31008 or 06100-31027
2.1×50mm	2.1×33mm	06100-31021	4.6×100mm	4.0×50mm or 4.6×30mm	06100-31008 or 06100-31027
2.1×75mm	2.1×50mm	06100-31025	4.6×150mm	4.0×50mm or 4.6×50mm	06100-31008 or 06100-31000
2.1×100mm	2.1×50mm	06100-31025	4.6×250mm	4.0×50mm or 4.6×50mm	06100-31008 or 06100-31000
2.1×150mm	2.1×50mm	06100-31025	6.0×250mm	4.6×50mm	06100-31000
3.0×30mm	2.1×33mm	06100-31021	6.5×250mm	4.6×50mm	06100-31000
3.0×50mm	2.1×33mm	06100-31021	7.8×300mm	7.8×50mm	06100-31000
3.0×100mm	3.0×33mm	06100-31018	10×250mm	7.8×50mm	06100-31000
3.0×150mm	3.0×33mm	06100-31018	<b>UHPLC Column</b>	<b>GB Dimension</b>	<b>P/N</b>
3.0×250mm	3.0×50mm	06100-31016	2.1×30mm	2.1×33mm	06100-31021
4.0×30mm	2.1×33mm	06100-31021	2.1×50mm	2.1×33mm	06100-31021
4.0×50mm	2.1×33mm	06100-31021	2.1×75mm	2.1×50mm	06100-31025
4.0×75mm	4.0×30mm	06100-31026	2.1×100mm	2.1×50mm	06100-31025
4.0×100mm	4.0×30mm	06100-31026	3.0×30mm	2.1×33mm	06100-31021
4.0×150mm	4.0×50mm	06100-31008	3.0×50mm	2.1×33mm	06100-31021
4.0×250mm	4.0×50mm	06100-31008	3.0×100mm	2.1×50mm	06100-31025
4.6×30mm	2.1×33mm	06100-31021	4.6×30mm	2.1×50mm	06100-31025
4.6×50mm	2.1×33mm	06100-31021	4.6×50mm	2.1×50mm	06100-31025