

7. PACKING INSTRUCTIONS

Safety tip

Glass columns must never be packed under gas pressure without the appropriate protection equipment. You should always keep within the stated pressure limits for columns and related equipment. Appropriate clothing for the laboratory and safety glasses are essential.



PLEASE NOTE: A glass column should never be used under gas pressure. Even small stresses in the body of the column are sufficient to cause the column to explode, thus freeing the expansion energy of the gas and causing the shards of glass to act like projectiles. If the glass body shatters under the pressure of a liquid, on the other hand, there is no danger, since liquids are much less compressible and have virtually no expansion energy.

Packing the column with rigid media

Introduce a few ml of solvent or buffer (see instructions on packing material) into the packing device, so that the lower frit is moistened and free from air bubbles. Next the slurry is shaken carefully until it has a uniform consistency and quickly poured into the packing device without introducing any air bubbles. The slurry container must not have any air bubbles at all in it. If necessary, it can be topped up with solvent. The packing device is then sealed and packed as quickly as possible using a pump: this means that the flow rate should be set at the pressure limit of the column, so if necessary packing is carried out at the pump's maximum flow rate. A narrow PEEK capillary at the column outlet may improve packing quality, as it will act like a back-pressure regulator and prevent the slurry entering the column too quickly at first. Pumping must continue at least until a constant pressure is reached. The flow rate during packing should always be considerably higher (>20%) than the flow rate needed for later use. After packing, the filling tube is unscrewed. Care must be taken when opening the column outlet so that any remaining pressure is released completely.

The piston is introduced carefully, without allowing any particles to get between the glass and the piston seal. The column is now re-attached to the pump, the pump is started at low pressure and the flow gradually increased to the pressure limit of the column. At this point dead volume may occur between the variable piston and the column bed, which can be removed by moving the variable piston towards the column bed. For this, the column must not be under pressure, i.e. the pump must be turned off and the column inlet opened. Next the column is conditioned with the relevant eluents and is ready to be used.

Revision 2.0
1/1/02