



## What are the differences between 33 and 51 expansion glass and which should I choose – FAQ

Our MicroSolv brand vials are made from SCHOTT® brand glass tubing, of first hydrolytic class. First hydrolytic class glass is very hard and has a low expansion coefficient, even when large variations in manufacturing temperatures are observed. It has an excellent chemical resistance to acidic, neutral and relatively low alkaline solutions.

Clear glass of first hydrolytic class is divided into two categories: “33 expansion” (*Type 1, Class A*) and “51 expansion” glass (*Type 1, Class B*). The indicated lower expansion coefficient of 33 implies that this harder clear glass has to be processed at higher temperatures when manufacturing auto sampler vials. Approximately 1,200°C is required for “33 expansion” glass in comparison to only approximately 1,000°C for “51 expansion” glass.

From a quality point of view, both types of glass are equally suitable for use as an autosampler vial for chromatography. When manufacturing these vials the risk of bringing substances from the glass to the surface is higher with “33 expansion” glass due to the higher temperatures required.

Another source of these extracted substances during the vial making process is a difference in the temperature of the glass. For example, the screw thread tooling will be different than the body of the vial. This is more exaggerated for “33 expansion” glass compared to “51 expansion”.

To ensure an exact fit of the vial into the auto sampler, very hard, low expansion glass of very tight manufacturing specification is used.

Click [HERE](#) for Autosampler Vial ordering information.

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