

## What Are the Operating Temperatures for My Column?

All Restek columns have published minimum and maximum operating temperatures that establish the working range for the stationary phase. Note that these ranges vary with the thickness of the coating.

### Rtx®-VMS (fused silica)

ID	df (μm)	temp. limits
0.25mm	1.40	-40 to 240/260°C
0.32mm	1.80	-40 to 240/260°C
0.45mm	2.55	-40 to 240/260°C
0.53mm	3.00	-40 to 240/260°C

Many phases list 2 maximum operating temperatures. The first temperature is the maximum isothermal operating temperature, the temperature to which the columns are guaranteed to meet the minimum bleed specification (i.e., lowest bleed level). The second temperature is the maximum temperature-programmed operating temperature, the temperature to which the column can be heated for short periods of time (i.e., during a temperature-programmed analysis). The maximum isothermal operating temperature usually is 10–20°C lower than the temperature-programmed temperature. If only one temperature is listed, it is both the isothermal and the maximum temperature.

The minimum operating temperature defines the lowest usable temperature before the stationary phase solidifies. Operating the column below the minimum temperature will not harm the phase, but poor peak shape and other chromatography problems will occur.

## Selection of Capillary Column Summary

Selecting the proper column for an analysis can be done by utilizing the resources available. This includes the following steps:

### 1) Choose proper phase

- a. Review the application section of this catalog or [www.restek.com](http://www.restek.com) for similar compound list.
- b. Call Restek's experienced technical support team (800-356-1688, ext. 4) or e-mail us at:
  - i. [support@restek.com](mailto:support@restek.com) (in the USA)
  - ii. [intltechsupp@restek.com](mailto:intltechsupp@restek.com) (international)
  - iii. or contact your Restek representative.

### 2) Select column ID, film thickness, and length

- a. Base consideration on:
  - i. Injection technique (split, splitless, cool on-column, etc.)
  - ii. Detector type (is higher flow required?)
  - iii. Amount of analyte being injected onto column (sample capacity)

### 3) Set optimum parameters for your analysis

- a. Optimize column flow (mL/min.)
- b. Choose appropriate carrier gas (hydrogen, helium, or nitrogen)
- c. Optimize oven temperature program



need more help?

- Call 800-356-1688 or 814-353-1300, ext. 4, or your Restek representative.
- Visit [www.restek.com](http://www.restek.com)
- Email (U.S.): [support@restek.com](mailto:support@restek.com)  
Email (outside U.S.): [intltechsupp@restek.com](mailto:intltechsupp@restek.com)