

# C16 Adsorbent Resin for Trapping Volatiles

## Tenax™ -TA & Tenax-GR

Tenax is a porous polymer resin based on 2,6-diphenylene oxide. It is widely used for trapping VOC's from air and liquids for subsequent analysis. Tenax is especially beneficial in trapping volatile organics from high moisture content samples, and used in conjunction with the Short Path Thermal Desorption System. Low level detection of VOC's in the ppb and ppt is possible.

Tenax-TA replaced the previous polymer Tenax-GC which has been discontinued. Tenax-TA which is a specially processed Tenax is designed primarily as a trapping agent, and has very low levels of impurities. Tenax-GR is a composite of Tenax-TA with 30% graphite as an integral part of the mixture. The added graphite increases the breakthrough volume for many organic volatiles while still maintaining the low affinity for water.

### Applications include the following:

- Purge and Trap of Volatiles from Water
- Trapping of Volatiles from Environmental Air
- Trapping of Volatiles from Human Breath
- Trapping of Flavors and Fragrances from Plants and Commercial Products
- Trapping of Volatiles from Soils
- Personal Exposure Monitoring

Before use it is recommended that Tenax-TA/Tenax-GR be thermally conditioned with a high purity gas at elevated temperatures to remove any residual components using the following procedure. It is important that no oxygen be permitted to enter the Tenax-TA/Tenax-GR material when it is at elevated temperatures.

### Conditioning of Tenax-TA & Tenax-GR Traps for Thermal Desorption

1. The Tenax-TA/Tenax-GR should be packed in the sample tube between two silanized glass wool or quartz wool plugs.
2. High purity helium or nitrogen (less than 1 ppm oxygen) should be passed through the sample tube with Tenax-TA/Tenax-GR at a flow of 10 to 50 ml/min.
3. Begin to heat the sample tube with Tenax-TA/Tenax-GR from room temperature up to 300 - 340° C at a temperature ramp of 4 to 10° per minute.
4. When the maximum temperature is reached, maintain the sample tube at this temperature for 2 to 4 hours with constant gas flow thru the Tenax-TA/Tenax-GR.
5. Cool the sample tube with continued gas flow. As soon as it is cool, seal the tubes until ready for use. Do not use plastic or rubber seals. PTFE seals in the caps can be used for storage.

## Tenax-TA Adsorbent Resin for Trapping Volatiles

- Trap Volatiles from Air, Liquids and Solids
- High Temperature Limit of 350° C
- Low Affinity for Water
- Stable Baseline after Conditioning
- Replaces Tenax-GC

Tenax-TA is a porous polymer resin based on 2,6-diphenylene oxide. It has been specifically designed for the trapping of volatiles and semi-volatiles from air or which have been purged from liquid or solid sample matrices. Both the EPA and NIOSH specify the use of Tenax in their standard methods. Tenax-TA is a low bleeding material with a low level of impurities and has replaced Tenax-GC, which was distributed in the past. Tenax-TA can be applied both as a column packing material and for traps for organic volatile and semi-volatile compounds. Using thermal desorption techniques such as the S.I.S. Purge and Trap system in conjunction with the Short Path Thermal Desorption System, detection of volatile organics in the ppb and ppt level is feasible. Due to its low affinity for water, Tenax-TA is especially useful for the purging and trapping of volatiles from high moisture content samples including the analysis of volatile organic compounds in water.

### Tenax TA Breakthrough Volume Poster - see page C41

Part No.	Description	Price
99560	24" x 36" Tenax-TA, wall chart	

### Properties of Tenax-TA

Specific Surface Area	35 m <sup>2</sup> /g
Pore Volume	2.4 cc/g
Average Pore Size	200 nm
Density	0.25 g/cc

Part No.	Description	Size	Price
979301	Tenax-TA, 60/80 mesh	5.0 gram	
979302	Tenax-TA, 60/80 mesh	10.0 gram	
979303	Tenax-TA, 60/80 mesh	25.0 gram	
979304	Tenax-TA, 60/80 mesh	100 gram	
979305	Tenax-TA, 60/80 mesh	500 gram	
979306	Tenax-TA, 60/80 mesh	1000 gram	<b>CALL</b>
979501	Tenax-TA, 35/60 mesh	5.0 gram	
979502	Tenax-TA, 35/60 mesh	10.0 gram	
979503	Tenax-TA, 35/60 mesh	25.0 gram	
979504	Tenax-TA, 35/60 mesh	100 gram	
979505	Tenax-TA, 35/60 mesh	500 gram	
979506	Tenax-TA, 35/60 mesh	1000 gram	<b>CALL</b>

Pricing on larger quantities and other mesh sizes available on request.