

# Rtx<sup>®</sup>-1 Bonded Packed Columns

## Helping Save Time and Money

Is your laboratory currently using packed columns? Do you like the advantages of bonded phase columns, but don't want to convert to

Bonded stationary phases shorten conditioning times and extend column lifetime. Restek's chemists have synthesized new polymers which bond to the surface of the diatomite support.

calibration mix. The Rtx<sup>®</sup>-1 column demonstrates symmetrical peaks and a stable baseline after only 30 minutes of conditioning at 350°C. Table I shows the excellent retention time repeatability obtained with this bonded column demon-

bleed and more tailing than the Rtx<sup>®</sup>-1 column. Although actual column lifetime will depend on the system and types of samples run, bonded phase columns will last longer than non-bonded columns under equivalent conditions.

**Improved Thermal Stability.**  
**Lower Bleed Levels.**  
**Faster Conditioning Times.**  
**Polarity Equivalent to OV-101, UCW-982, SE-30, SP-2100, & other methyl silicone phases.**

Because this layer is immobilized and preconditioned, there is no need for extended conditioning in the GC oven.

Use bonded packed column phases and your lab will save time and money with reduced conditioning times and increased reproducibility.

The advantages of the bonded Rtx<sup>®</sup>-1 are best shown in a calibration run for ASTM D2887. Figure 1 shows the analysis of the D2887

Table I: Retention Time Repeatability for Calibration after only 30 minutes conditioning

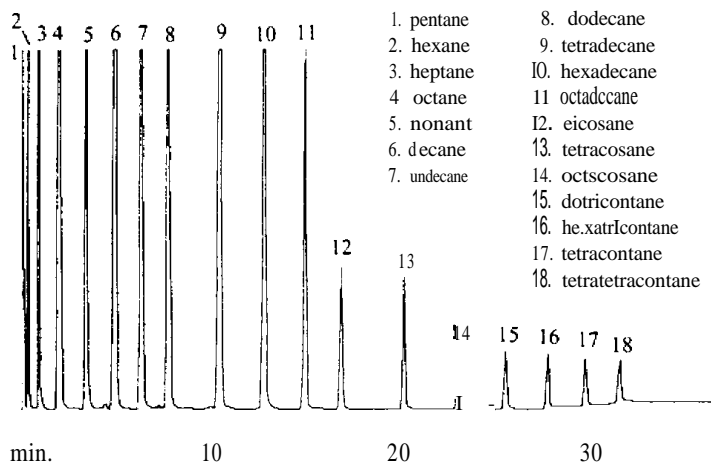
Hydrocarbon	Min Rt	Max Rt	Avg. RT	Stand. Dev.
C5	0.211	0.243	0.232	0.001
C6	0.493	0.497	0.495	0.002
C10	5.746	5.765	5.752	0.005
C20	18.382	18.491	18.456	0.004
C28	25.093	25.103	25.098	0.004
C40	32.160	32.171	32.166	0.004
C44	34.316	34.325	34.326	0.007

n=9

II: McReynolds Numbers for Methyl Silicone Phases

Compounds	Rtx-1	SE-30	OV-101
benzene	22	24	15
n-butanol	63	53	58
pentanone	39	12	45

Figure I: C5 to C-44 calibration analysis after only 30 minutes conditioning.



25" x 1/8" Rtx<sup>®</sup>-1 SimDist 2887 (cat.# 80000)  
 1.0ul direct injection of D2887 Calibration Mix (cat.# 31222)  
**Oven temp.:** 35°C to 350°C @ 10°C/min. (hold 5 min.)  
**Inj. & det. temp.:** 350°C  
**Carrier gas:** helium @, 3ml/min.  
**FID sensitivity:** 756 x 10<sup>-11</sup> AFS

strating these columns can be used repeatedly at high temperature without loss of stationary phase.

The bonded stationary phase will also reduce your costs by offering increased column lifetimes. Phase degradation occurs as a result of oxygen in the carrier gas during conditioning or analysis. With bonded stationary phases, there is increased resistance to oxidation. Figure 2 shows a comparison of a conventional UCW-982 packed column to the Rtx<sup>®</sup>-1 bonded packed column. After only 170 temperature cycles, the UCW-982 column exhibited higher

Rtx<sup>®</sup>-1 bonded columns have equivalent polarity to OV-101 and SE-30 stationary phases. The Rtx<sup>®</sup>-1 bonded packing incorporates cross linking which does not alter the polarity of the stationary phase. Crosslinking increases thermal stability and reduces conditioning time without compromising resolution. Table II lists the McReynolds values obtained using the Rtx<sup>®</sup>-1 bonded packing versus OV-101 and SE-30 phases.

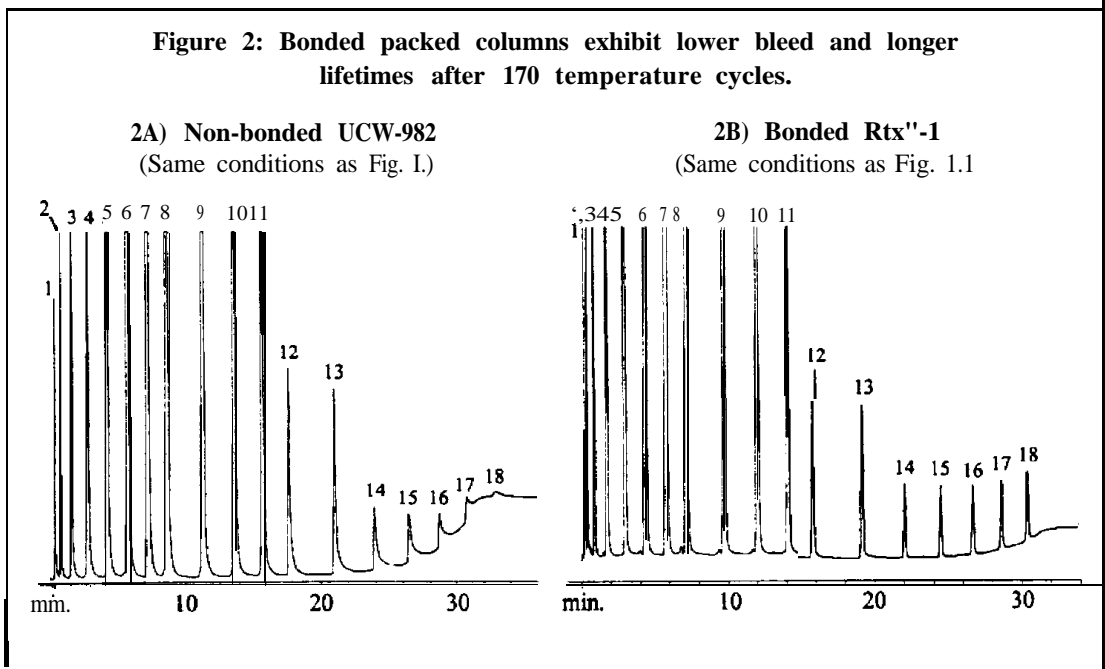
For high boiling compounds, low percentage loadings have traditionally been used. These columns often suffer from



short column lifetimes and rapid loss of efficiency. With Restek bonded phases, loadings as low as 3% last longer than any traditional liquid phase available. Figure 3 shows the analysis of TMS derivatives of sugars and sugar alcohols using a 3% Rtx@-1 bonded packed column.

Silcoport™, the most inert solid support available. Silcoport™ is a processed highly deactivated version of Chromosorb W. The procedure in cleaning this material prior to deactivation yields a surface which is free of metal contaminants that can cause high bleed and sample decomposition. The diatomite is deactivated using a proprietary, high temperature process that results in the most inert solid support available. Each lot is batch tested with 50pg of DDT and endrin to check for active sites that may remain on the diatomite surface. These precautions ensure excellent reproducibility for every batch of Silcoport™.

Other configurations are available.



### Configurations

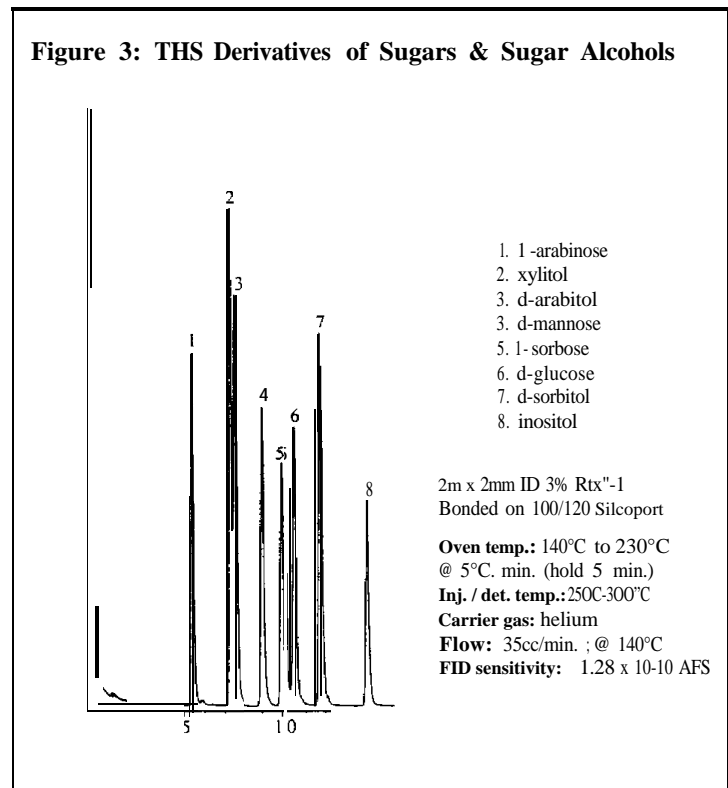
General Configuration:  
Suffix -800

HP 5880,  
5890, 5987  
Suffix -810

Varian 3700, Vista Series, FID:  
Suffix-820

PE 900-3920, Sigma 1,2,3:  
Suffix-830

PE Auto System  
8300, 8400, 8700  
(Not On-Column):  
Suffix -840



*All on Silcoport™ 100/120 mesh (bonded)*

3% Rtx"-1	2.00m	1/8"	2m.m	cat.# 80401*
3% Rtx"-1	3.05m	1/8"	2mm	cat.# 80402*
3% Rtx"-1	2.00m	3/16"	4mm	cat.# 80403*
3% Rtx"-1	3.05m	3/16"	4mm	cat.# 80404*
10% Rtx "-1	2.00m	1/8"	2mm	cat.# 80405*
10% Rtx"- 1	3.05m	1/8"	2mm	cat.# 80406*
10% Rtx"-1	2.00m	3/16"	4mm	cat.# 80407*
10% Rtx"-1	3.05m	3/16"	4mm	cat.# 80408*
20% Rtx"- 1	2.00m	1/8"	2mm	cat.# 80409*
20% Rtx"- 1	3.05m	1/8"	2mm	cat.# 80410*
20% Rtx" 1	2.00m	3/16"	4mm	cat.# 80411*
20% Rtx"- 1	3.05m	3/16 "	4mm	cat.# 80412*
Rtx"1 SimDist	2887:	25", 1/8"2mm		cat.# 80000

\* please incide configuration strji.r number when ordering.

**Don't settle for yesterday's technology. Save your lab time & money. Use Restek's new bonded Rtx"-1 packed columns.**