

## Reversed-Phase Materials (continued)

### Polymer-based Phases

The polymer-based reversed-phase materials are chemically stable from pH 2 – 12, allowing operation at basic pH where silica-based phases have limited chemical stability. The non-porous Octadecyl-NPR column produces extremely fast kinetics and quantitative recovery of proteins at sub-microgram loads. Figure 9 shows the high resolution, fast separation of peptides on a TSKgel Octadecyl-NPR column.

TSKgel® Octadecyl-4PW is suitable for the analysis of peptides and small proteins, whereas the TSKgel Octadecyl-2PW is used for small pharmaceutical compounds at basic pH. TSKgel Phenyl-5PW has a high loading capacity and is ideal for the separation of high molecular weight proteins.

The specifications of these phases are summarised on page 247.

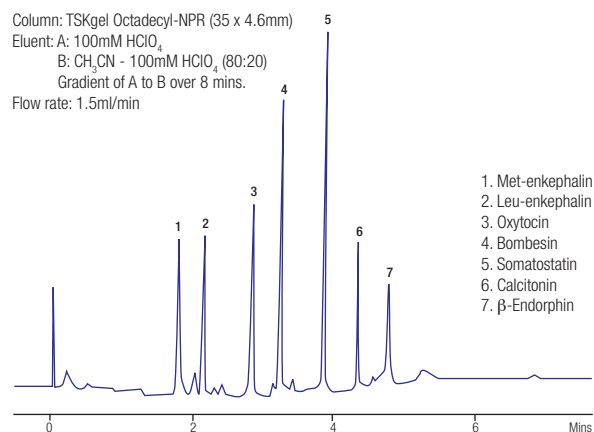


Figure 9. High speed analysis of peptides

### Ordering Information – Polymer-based Phases

TSKgel Phase	Column Dimensions <sup>1</sup> (mm)						Guard Cartridge (3/pk)	
	75 x 2.0	150 x 2.0	35 x 4.6	75 x 4.6	150 x 4.6	150 x 6.0	For 2.0mm i.d. columns <sup>2</sup>	For 4.6mm i.d. columns <sup>3</sup>
Octadecyl-2PW	-	18754	-	-	17500	17501	42161	-
Octadecyl-4PW	-	18755	-	-	13351	-	42160	19008
Phenyl-5PW RP	18756	-	-	8043	-	-	42159	19007
Octadecyl-NPR	-	-	14005	-	-	-	-	-

<sup>1</sup> Preparative dimensions available

<sup>2</sup> Use with holder 19308

<sup>3</sup> Use with holder 19018

### Hydrophobic Interaction (HIC) Phases

- Ether, phenyl and butyl functionalities
- Analytical and preparative columns
- Wide pH range (2 – 12)
- Fully scalable from analytical to preparative dimensions

#### TSKgel HIC Phases

Phase	Structure	Particle Size (µm)	Pore Size (Å)
Ether-5PW		10, 13, 20	1000
Phenyl-5PW		10, 13, 20	1000
Butyl-NPR		2.5	-

The porous HIC packing materials are based on the G5000PW resin and derivatized with phenyl (Phenyl-5PW) or oligoethyleneglycol groups (Ether-5PW). The Ether-5PW is less hydrophobic than Phenyl-5PW and thus exhibits shorter retention times. Butyl-NPR is based on 2.5µm non-porous particles of the same chemical composition as G5000PW, and is useful for high speed applications. It is more hydrophobic than Phenyl-5PW. It also benefits from excellent mass recovery and is the preferred choice for process monitoring and quality control. The TSKgel HIC columns are compatible with water-soluble organic solvents at concentrations below 50% methanol, ethanol, acetonitrile, DMF, DMSO or below 30% chloroform.

#### Applications of TSKgel HIC Phases

Sample	MW Range (Da)	TSKgel Phase
Peptides	<10,000	Butyl-NPR
Medium to large proteins	>10,000	Phenyl-5PW, Ether-5PW, Butyl-NPR
DNA, RNA and PCR products	>500,000	Phenyl-5PW, Butyl-NPR
Oligonucleotides	>10,000	Phenyl-5PW, Butyl-NPR

### Ordering Information – TSKgel HIC Phases

Phase	Column Dimensions (mm)					Guardgel Kit <sup>1</sup>	
	75 x 2.0	35 x 4.6	100 x 4.6	75 x 7.5	150 x 21.5	For 4.6 and 7.5mm i.d. columns	For 21.5mm i.d. columns
Ether-5PW (10µm)	18760	-	-	8641	-	8643 <sup>3</sup>	-
Phenyl-5PW (10µm)	18759	-	-	7573	7656 <sup>2</sup>	7652 <sup>3</sup>	16095 <sup>2</sup>
Butyl-NPR	-	14947	42168	-	-	-	-

<sup>1</sup> Kit contains guard, holder and connector

<sup>2</sup> 13µm material

<sup>3</sup> 20µm material