



HybCPG™ (hybrid CPG) is a new and unique solid synthesis support which combines all the advantages of classic CPG with the loading capacity of polystyrene supports, with no bulk swelling.

- ✓ Highly conformal, thin polymer coating
- ✓ Highly controlled, regular spacing of the reactive sites on the polymer backbone
- ✓ Complete dimensional stability of HybCPG™ in synthesis solvents
- ✓ Excellent for micro-scale and large scale synthesis
- ✓ Available in a variety of pore sizes and nucleoside loadings: Try a Sample Kit
- ✓ Available in Universal Linker formats

Product Overview

Prime Synthesis, Inc. (PSI) is a leading producer of Controlled Pore Glass (CPG) based solid synthesis supports, providing its products to the oligonucleotide (oligo) synthesis market for over two decades. Several years ago, the market asked for a more cost-effective solid support, and the concept of a hybrid support was born. This novel approach combines all of the advantages of classic CPG with the advantages of polystyrene supports. It offers a more highly loaded synthesis support with complete dimensional stability during synthesis. Advanced polymer coating methodology provides an optimized, continuous coating on the rigid CPG skeleton, while maintaining the detailed pore structure of CPG, which is critical to good synthesis performance. Since there is no bulk swelling, complexities of volume changes and backpressure increases during synthesis are eliminated. The chemical structure of the polymer coating is custom designed to give highly controlled regular spacing of the reactive sites along the polymer backbone, resulting in loading capacity increases of 3-4 times that of classic CPG. The result is competitively higher synthesis column loadings with unrivaled synthesis performance in terms of both purity and yield.

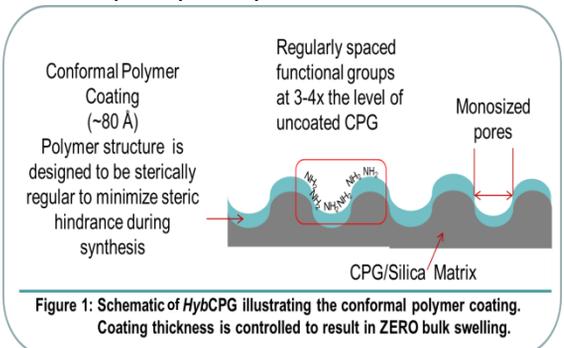


Figure 1: Schematic of HybCPG illustrating the conformal polymer coating. Coating thickness is controlled to result in ZERO bulk swelling.

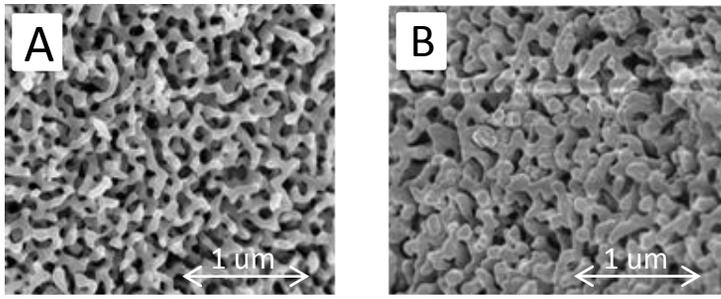
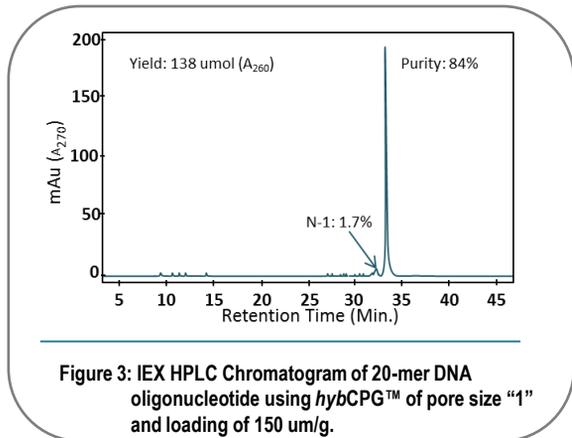


Figure 2: SEM Micrographs of (A) classic uncoated and (B) hybrid coated Controlled Porosity Glass. Pore structure is completely preserved. Images courtesy of NIST.

DNA 20-mer Synthesis on *HybCPG*TM



- Synthesizer: AKTA Oligopilot 100 plus
- Synthesis Scale: 238 umoles, 6.3 ml col.
- Sequence: 5' GCA CTT CAG GCT CCT GGG CT -3'
- Amidite Concentration: 0.1 M
- Amidite Excess: 1.5
- Amidite recycle time: 5 minutes
- Bed height limitations: none
- Post synthesis deprotection (6.3 ml col):
 - Soak in 1 CV acetonitrile for 5 min
 - Add 12 CV 25% ammonium hydroxide
 - Incubate 5 Hr. @ 60°C

Guidelines for Using *HybCPG*TM Solid Synthesis Support

A. Column Packing:

Since it undergoes no bulk swelling during synthesis, *hybCPG*TM can be packed anywhere between 90 to 100 % of a fixed-bed column volume, similar to classic CPG. It can also be loaded as a slurry, if desired.

B. Selecting the Optimum Pore Size and Loading:

The recommendations found in "Ordering Information" may also be used to the best determine pore size and ligand loading for your application

*HybCPG*TM Ordering Information

Part Number Format: *HybCPG*-X-YYY-ZZZ*

Pore size specification= X

X= 1 (Optimum pore size for short DNA oligo sequences)

X=2 (Optimum pore size for short RNA and mid DNA oligo sequences)

X=3 (Optimum pore size for longer RNA and DNA oligo sequences)

X=4 (Optimum pore size for longest RNA and DNA oligo sequences, or bulky protecting groups)

Loading Range specification= YYY

Y=075 (75umole/g +/- 10%)

Y=100 (100 umole/g +/- 10%)

Y=125 (125 umole/g +/- 10%)

Y=150 (150 umole/g +/- 10%) : Note- for Pore size ranges 1 and 2 only

Y=175 (175 umole/g +/- 10%): Note- for pore size range 1 only

***ZZZ= Ligand code. A wide variety of ligands are available. Please inquire with the factory directly at sales@primesynthesis.com or call 1- 610-558-5920 ext 112.**

Why not try a few samples?

Click on the link to Order a Sample Kit [online](#) and see which options work best for you!