Polyacrylamide gel electrophoresis (PAGE) remains one of the best tools for the purification of oligos and nucleic acids in general (RNA and other second/third generation molecules, e.g. LNA’s, UNA’s, etc).

The 7M urea ensures the linearity of the nucleic acids, by avoiding secondary/tertiary structure formation. 0.1% APS (Ammonium persulfate) and 0.1% TEMED (Tetramethylethylenediamine) are used to crosslink the polyacrylamide.

**Gel percentage.** For the separation of oligos up to 30-40 bases a 20% gel is used. For oligos longer than 40 bases a 15% PAGE gel is suggested.

**Dyes used in PAGE purification.** These two dyes have proven very useful:

- **a)** Bromophenol blue (BPB), in a 15% gel this dye runs as a 12mer; in a 20% gel this runs as an 8mer
- **b)** xylene Cyanol (XC), in a 15% gel this dye runs as a 35mer; in a 20% this dye runs as a 24 mer

Therefore, user is advised to consider these mobilities when applying oligos in the PAGE gel; if you have a series of 24mers and you are running a 20% gel, you may want to only use BPB as your reference dye and skip XC, as this will overlap your 24mer oligos.

**Analytical PAGE gel.** For quality control purposes a 0.5-1.0 mm thickness comb/spacer combination is suggested. Need about 0.5 OD of the oligo in order to visualize it by UV shadowing.

**Preparative PAGE gel.** A comb/spacer combination with 3-5mm thickness is suggested; depending on the length of the well, user can purify 10-20 OD’s oligos per well (1x1/4 inch well).

**Base composition effect.** Two oligos of the same size but different base compositions, will not run at same distance in a PAGE gel. More on this subject on a separate report.

Bio-Synthesis.Inc, has been producing synthetic oligonucleotides for over 25 years; not only DNA, but RNA, other modified oligonucleotides, and provide cross-linking of various types of biomolecule using our optimized bioconjugation strategies, which have a number of applications on gene expression inhibition and related antisense studies. Also synthetic peptides and peptide antibodies for a number of biological relevant applications, in the areas of proteomics, epigenetics, immune regulation, post translational modifications, antisense, gene expression control, RNA interference and more. For more product information, visit: [www.biosyn.com](http://www.biosyn.com).