

# **SYNTHESIS AND CHARACTERIZATION OF LINEAR AND MIKTOARM STAR COPOLYMERS WITH HIGH FLORY-HUGGINS ( $\chi$ ) INTERACTION PARAMETER**

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Herein, we describe the synthesis of linear and miktoarm star copolymers with high Flory-Huggins interaction parameter,  $\chi$ , via anionic polymerization, high vacuum techniques and chlorosilane chemistry. Block copolymers of a wide range of compositions and molecular weights with low PDI values were synthesized. Due to their strong immiscibility, even low molar mass chains of high- $\chi$  copolymers can self-assemble into well-ordered nanodomains, providing, thus, access to ultra-small nanostructures. Complex macromolecular architecture is, also, known to strongly impact the microphase separation process. In this work, we study miktoarm star copolymers of AB<sub>n</sub> type along with their linear counterparts with a view to making direct comparisons on a high- $\chi$  system. All copolymers were characterized by Size Exclusion Chromatography (SEC), Nuclear Magnetic Resonance (NMR) and Small-Angle X-Ray Scattering (SAXS) techniques.