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**Structure and mechanical properties of dried syndiotactic polypropylene gels formed at different cooling temperatures** SAWAKO MIZUNO, ATSUSHI HOTTA, Keio Univ — The structures of dried syndiotactic polypropylene (sPP) gels were analyzed and the mechanical properties of the dried sPP gels were investigated. Our group has previously reported that sPP/decahydronaphthalene (decalin) gels possessed different crystalline structures depending on different cooling temperatures (using liquid nitrogen or at room temperature). In this study, dried sPP gels were made and the solvent was completely removed from the gels by vacuum drying. The microstructures of the resultant sPP/decalin gels were analyzed by optical microscopy, differential scanning calorimetry (DSC), and small angle X-ray scattering (SAXS) measurements. Tensile testing with elastic recovery testing was carried out to measure the mechanical properties of the dried sPP/decalin gels. It was found that the dried quenched-gels presented higher elastic recovery and higher strain at break than the dried gels cooled at room temperature, although the crystallinities of both gels measured by DSC were almost the same. It was considered from the experimental results that homogeneous and dense crystalline-network structures existed in the dried quenched-sPP/decalin gels.

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