

Abstract Submitted
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**Amylose Crystallization From Concentrated Aqueous Solution:
Role of Degree of Polymerization** JOHN CREEK, JAMES RUNT, GREGORY
ZIEGLER, The Pennsylvania State University — In earlier research, we demon-
strated that amylose forms a spherulitic morphology when crystallized from concen-
trated amylose - water solutions, over a wide degree of crystallization conditions.
The process has been described as depending on a competition between crystal-
lization and liquid-liquid phase separation processes. In the present study acid
degradation and enzymatic debranching are utilized to create a number of amylose
fractions differing in degree of polymerization, ranging from DPs of 20 to 920. It was
determined (using DSC and x-ray diffraction) that the shorter the chain length, the
higher the final degree of crystallinity. Atomic force microscopy is used to investigate
the microstructure of amylose lamella within the spherulites.

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