

# **INFLUENCE OF COOLING WATER TEMPERATURE ON FILM STRETCHABILITY, SUPERSTRUCTURE AND FILM PHYSICAL PROPERTIES OF RANDOM COPOLYPROPYLENE IN DOUBLE BUBBLE TUBULAR PROCESS**

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## **ABSTRACT**

It is commonly said that the molten resin of polyolefin extruded from die in the double bubble tubular process should be cooled by low temperature cooling water. This is because restraining the crystallization progress by low temperature cooling water makes it possible to obtain good stretchability and good physical properties of the stretched film. Therefore the cooling water temperature is customarily set low. However, the correlations among the cooling water temperature, the stretchability and the physical properties of stretched film have not been reported thoroughly.

This report discusses the influence of the cooling water temperature in the double bubble tubular process on the stretchability, the physical properties of the stretched film and the film superstructure of random copolypropylene (r-PP) which is commonly used for this process.

It was found that the stretchability was not influenced by the cooling water temperature in the double bubble tubular process, also the physical properties of the stretched film and the film superstructure of r-PP was slightly changed by the cooling water temperature. However such changes could be compensated by adjusting the preheating process temperature so that the stretching stress could be of the same value.