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Relationships Among Lamellar Morphology Parameters, Structure and Thermal Behavior of Isotactic Propene-Pentene Copolymers: The Role of Incorporation of Comonomeric Units in the Crystals

Claudio De Rosa, Miriam Scoti, Finizia Auriemma, Odda Ruiz de Ballesteros, Giovanni Talarico, Rocco Di Girolamo, Roberta Cipullo

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# Relationships Among Lamellar Morphology Parameters, Structure and Thermal Behavior of Isotactic Propene-Pentene Copolymers: The Role of Incorporation of Comonomeric Units in the Crystals

*Claudio De Rosa,\* Miriam Scoti, Finizia Auriemma, Odda Ruiz de Ballesteros, Giovanni Talarico,  
Rocco Di Girolamo, Roberta Cipullo*

Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Complesso Monte S. Angelo, Via  
Cintia, I-80126 Napoli, Italy,

E-mail of corresponding author: [claudio.derosa@unina.it](mailto:claudio.derosa@unina.it)

**Keywords:** Isotactic propylene-pentene copolymers; Metallocene catalyst; Thermal behavior; Crystal Morphology; Inclusion of comonomer units in the crystals.

**Abstract.** The correlations between the thermal behavior and the crystal morphology of isotactic propene-pentene copolymers were studied through wide-angle (WAXS) and small-angle (SAXS) X-ray diffraction. Copolymers with pentene concentration lower than 11 mol% crystallize in the  $\alpha$  form of isotactic polypropylene (iPP) and a concomitant decrease of melting temperature and of the thickness of crystalline lamellae with increasing pentene concentration has been observed. At higher pentene concentrations the trigonal form of iPP crystallizes and a neat increase crystalline lamellar thickness

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