

Abstract Submitted  
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**Determining the Heat of Fusion and Crystallization Kinetics of Trogamid<sup>1</sup>** BIN MAO, PEGGY CEBE, Tufts University — Trogamid<sup>TM</sup> is a high performance semi-crystalline polyamide with optical clarity, chemical resistance and high toughness. It also has much higher glass transition temperature than traditional polyamides, providing excellent thermal stability. We have used differential scanning calorimetry and real-time synchrotron wide and small angle X-ray scattering to study the isothermal crystallization of Trogamid from the melt at crystallization temperatures between  $T_c = 221$  °C and 233 °C. Our goal is to correlate the endothermic area from heat flow measurements with the crystallinity index obtained from X-ray scattering, to provide fundamental thermal information about the heat of fusion of Trogamid, which has not been measured to date. Avrami analysis has also been performed over the same temperature range, and been correlated with spherulitic growth rate data obtained from polarizing optical microscopy. For isothermal melt crystallization, the Avrami exponent,  $n$ , ranged from 2.13 to 2.23 for  $T_c$  from 230 °C to 233 °C.

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