

## Crystallization Behavior of PET Materials

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### Abstract

*Polyethylene terephthalate, commonly coded as PET, PETE, is a thermoplastic polymer resin of the polyesters and is used in liquid containers, drinks, food and synthetic fibres. Depending on its processing and thermal conditions, PET may exist both as amorphous and as semi-crystalline. PET may appear opaque, white and transparent depending on its crystalline and amorphous structure. Its crystallinity and consequently its physical and mechanical properties are highly dependent on processing conditions like processing temperature, cooling rate, stretching process etc. In this study, it was tried to summarize all about PET crystallization by referring to all studies carried out before. Crystallization is very significant properties affecting all mechanical and physical properties of PET just as for all kind of polymers. As a result, this subject has taken in very good interest so far and it is believed that this interest will go on increasingly.*

**Keywords:** Crystallization, material properties, PET

## PET Malzemelerin Kristalizasyon Davranışı

### Özet

*Polyethylene terephthalate, PET veya PETE şeklinde kısaltması yapılan, sıvıların, yiyecek ve içeceklerin saklanması ve taşınmasında, sentetik liflerin yapımında kullanılan polyester sınıfından termoplastik polimer bir reçinedir. Termal ve proses şartlarına bağlı olarak, PET amorf ya da semi-kristal yapıda olabilir. Bu özelliğinden dolayı PET donuk, beyaz ya da camımsı bir yapıda olabilir. PET'in kristal yapısı, buna bağlı olarak da fiziksel ve mekaniksel özellikleri büyük oranda işlem sıcaklığı, soğutma hızı, gerdirme işlemi gibi proses parametrelerine bağlıdır. Bu çalışmada, PET'nin kristalizasyonu ile ilgili daha önce yapılan bütün çalışmalar özetlenmeye çalışılmıştır. Tıpkı bütün polimerlerde olduğu gibi kristalizasyon PET'nin bütün fiziksel ve*

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# Crystallization Behavior Of Pet Materials

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*Plastics Technology Handbook* - Don Rosato, 2010-10-22 This comprehensive handbook provides a simplified practical and innovative approach to understanding the design and manufacture of plastic products It will expand the reader's understanding of plastics technology by defining and focusing on past current and future technical trends Published in 2 volumes the content is presented so that both technical and non technical readers can understand the interrelationships of materials to processes Different plastic products are examined and their related critical factors are shown from meeting performance requirements in different environments to reducing costs and targeting for zero defects Examples used include small to large and simple to complex shapes Information is included on static properties tensile flexural dynamic properties creep fatigue impact and physical and chemical properties Extensive reference sources and useful data and physical and chemical constants are also provided Volume 1 sets out the basic principles of polymers what they are and how plastics are formulated processed and manufactured

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