PEI material for optical modules

Overview

PEI resins are the material of choice for injection molded integrated lens applications due to good dimensional stability, near infrared (IR) optical transparency, low moisture uptake and high heat performance. Polyether imide, often abbreviated as PEI, belongs to the family of amorphous thermoplastics. The top two features of PEI include high-temperature resistance and exceptional mechanical strength. PEI plastics were first. Ultem, also known as Polyetherimide (PEI), is a high-performance engineering thermoplastic widely used in aerospace, medical, electronics, and automotive industries. Renowned for its exceptional strength, thermal stability, chemical resistance, and electrical insulation properties, Ultem has become. ULTEM® polyetherimide (PEI) resins have been used in opto-electronic markets since the optical properties of these materials enable the design of critical components under tight tolerances. A WDM module enables simultaneous transmission of multiple wavelengths of light over a single optical fibre.

Article Content

Hot

Properties and degradation behaviour of polyolefin

The material properties of single films as well as the electrical performance of test modules using these different encapsulants were

Sep 27, 2025 Hot

What Is Ultem (PEI)? Properties, Grades & Applications

In this guide, we will explore what Ultem material is, its properties, grades such as Ultem 1000, typical forms like Ultem filament and Ultem sheet,

Aug 07, 2025 Hot

Amorphous PEI for Injection-Molded Lenses Used in Co

An ultra-high-heat, near-infrared (IR)-transparent amorphous PEI grade designed for injection-molded lenses used in co-packaged optical

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Experimental Investigation on the Use of a PEI Foam as

Experimental Investigation on the Use of a PEI Foam as Core Material for the In-Situ Production of Thermoplastic Sandwich Structures Using Laser

Apr 20, 2026 Hot

Polyetherimide

Polyetherimide (PEI; branded as Ultem) is an amorphous, amber-to-transparent thermoplastic with characteristics similar to the related plastic PEEK. When comparing PEI to PEEK, the former is cheaper but has lower impact strength and a tighter temperature range. PEI plastics were first introduced into the market by General Electric (GE) in 1982 un

Nov 23, 2025 Hot

Polyetherimide (PEI) Plastic Materials | CAS 61128-46-9

Goodfellow''s PEI products deliver high-performance for aerospace, electronics, and medical research. Explore our PEI films, rods, and granules today!

May 14, 2026 Hot

PEI: The Key Material Powering the Future of 5G

Optical communication plays a pivotal role in meeting these needs, as it uses fiber-optic cables to transmit vast amounts of data at high speeds. PEI''s

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PEI: The Key Material Powering the Future of 5G

PEI''s excellent infrared transparency (with transmission rates of up to 88% in the 850-1550nm wavelength range) makes it the perfect material for

Oct 31, 2025 Hot

Polyetherimide (PEI) Material | High-Performance Engineering Plastic ...

Polyetherimide, universally known by its abbreviation PEI, represents one of the most capable high-temperature plastics in the engineering thermoplastic family. It is an amorphous, amber-transparent

Aug 01, 2025 Hot

Optimization of polyetherimide processing parameters for optical ...

In this paper, we evaluate and optimize PEI injection molding processes with a focus on optical property performance. A commonly used commercial grade was studied to determine factors

Oct 08, 2025 Hot

PEI plastics: the driving force of innovation in the

PEI plastics, with excellent heat resistance, chemical resistance and electrical insulation properties, have become an indispensable innovative material

Sep 24, 2025 Hot

Ultem® PEI Plastic Material Properties & Uses | Curbell

Ultem® Polyetherimide is a material with high dielectric strength and excellent electrical properties. It can withstand steam autoclaves. Research Ultem®

Jan 08, 2026 Hot

Types of Optical Modules

Therefore, when using such optical modules, select optical fibers of an appropriate length to ensure that the actual receive power is smaller than the overload power. If the optical fibers connected to a long

Nov 20, 2025 Hot

New melt-processable thermoplastic polyimides for opto-electronic ...

New ULTEM* polyetherimide (PEI) and EXTEM* thermoplastic polyimide (TPI) resins meet the material requirements for the optoelectronics industry. These resins have building blocks enabling IR light

Jun 07, 2026 Hot

Polyetherimide

Polyetherimide (PEI) is an amorphous engineering thermoplastic known to exhibit high-temperature resistance, outstanding mechanical, and electrical properties. Polyimides are a relatively new class

Oct 27, 2025 Hot

Polyetherimide

Polyetherimide (PEI) is defined as a high-performance plastic known for its exceptional mechanical, thermal, and electronic properties, offering greater temperature resistance and stiffness compared to

Oct 27, 2025 Hot

PEI plastic | Ensinger

PEI polymer is an amorphous thermoplastic with high mechanical strength and rigidity. It is commonly referred to as ULTEM TM plastic or ULTEM TM material. The PEI plastic has similar physical

Nov 10, 2025 Hot

PEI Injection Molding: Material & Process Guide

Compare PEI vs. PPS, PEEK, PAI for injection molding. Explore material properties, process challenges, costs, and applications for high

Oct 14, 2025 Hot

PEI | Plastic Injection Molding Material

PEI Plastic for Injection Molding: Definination, Main Properties, Pros & Cons, Brand Name, Data Sheet. Application, and Example Molded parts with photos.

Oct 01, 2025 Hot

Exploring transparent ultra – nanocellular high-performance polymers ...

Abstract The fabrication of ultra-nanocellular and transparent high-performance polymers based on polyetherimide (PEI) was investigated by exploring new CO2 saturation conditions and

Oct 05, 2025 Hot

Properties and Application of Super Engineering Plastics PEI

Polyetherimide, referred to as PEI, is a kind of transparent amber amorphous polyetherimide super engineering plastic, which has the best high temperature resistance and

Feb 16, 2026 Hot

Polyetherimide (PEI): Resin for High-Performance

Know the benefits of PEI for demanding applications in aerospace, medical devices, and electrical components due to its high performance and

Mar 27, 2026 Hot

Polyetherimide (PEI) Polymer: Structure, Material Properties ...

Select the right Polyetherimide (PEI) grade for your requirements based on its unique properties, applications, processing methods, and sustainable options.

Jan 28, 2026 Hot

Optical Module PCB: The Ultimate Guide to Design, Fabrication, and ...

This guide serves as an in-depth resource for engineers, designers, and project managers involved in the development of optical module PCBs. It will explore the complete product lifecycle, from design

Dec 03, 2025 Hot

Integrated plastic lens simplifies optoelectronic

SABIC''s ULTEM resin, a near-infrared (IR)-transparent, high-heat polyetherimide (PEI) material, was used to mold an integrated connector that was

Apr 13, 2026 Hot

Get more for your optical sensors with EXTEM and ULTEM resins

ULTEMTM and EXTEMTM RH resins series show excellent light transmission of over 85% for near infrared optical sensing. In addition, anti-reflection coatings (ARC) can help reduce first surface

Aug 18, 2025 Hot

PEI for Optical Transceiver Collimator Lenses for Fiber

As a thermoplastic, this resin helps enable complex part designs, like free-form optics and multi-channel lens arrays, which may be difficult to achieve

Sep 26, 2025 Hot

Polyetherimide | Formula, Properties & Application

Explore the world of Polyetherimide (PEI), a high-performance thermoplastic used in automotive, electronics, and aerospace.

Sep 12, 2025 Hot

High-Performance PEI (Polyetherimide) Material | Jekin Polymer

Premium Polyetherimide (PEI) materials with exceptional heat resistance and inherent flame retardancy. Ideal for aerospace interiors and medical components. 16+ years of expertise in high-temperature

Jun 26, 2026

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