



Heynova (Shanghai) New Material Technology CO., Ltd
Building 3, Zhangjiang Microelectronics Port, No. 690 Bibo Road, Pudong New Area, Shanghai
Tel: +86-178-2110-2608 Mail: info@heynovachem.com
Web site: www.heynovachem.com Post Code: 201203

PI sheets Introduction

- Polyimide sheet is a high-performance engineering plastic sheet made of polyimide (PI) as the base material. Its molecular structure contains an imide ring (-CO-N-CO-), belonging to the aromatic polymer compounds, with high temperature resistance, high strength, excellent insulation and other characteristics, is currently one of the best overall performance of organic polymer materials.

Core Advantages

- **Resistant to extreme temperatures**

Long-term use temperature up to 300 °C or more, short-term resistance to 400 °C high temperature, low temperature performance is stable (-269 °C), suitable for extreme environments.

- **Excellent mechanical properties**

High strength, high modulus, low creep, can replace some metal materials. For example, the flexural strength reaches 93MPa and the compressive strength 210MPa.

- **Chemical stability**

Resistant to acid, alkali and solvent corrosion, oxidation and radiation, long life.

- **Insulation and dielectric properties**

Low dielectric constant (3.2), high dielectric strength (400kV/mm), suitable for high frequency and high speed electronic equipment.

- **Lightweight and Environmentally Friendly**

Low density, intrinsic flame retardant (UL-94 highest flame retardant grade), part of the modified material can be biodegradable, in line with the trend of environmental protection.

- **Processing performance:** turning, milling, stamping, support for hot pressing, injection molding and other molding processes.

- **Composite modification:** composite with carbon fiber, graphite, etc., to further enhance the performance (e.g. polyimide/carbon fiber composites for aviation structural parts).

Main Applications

- **Aerospace field**

Manufacture of high-temperature structural components (such as engine components, heat-insulating materials), sealing materials and key components of spacecraft. Application examples: heat-insulating and noise-reducing materials for ships, high-temperature-resistant components for spacecraft.

- **Electrical and Electronics Field**

Flexible circuit boards (FPC), insulating materials, chip package substrates and high-temperature electrical insulating paints. For example, polyimide films are used for flexible displays and lithium battery separators.

Application examples: high-frequency circuit boards, electromagnetic shielding materials.

- **Automotive Industry**

Engine components, driveline seals and high-temperature resistant insulating materials. Examples include heat insulation and insulation for high-temperature parts under the hood of automobiles.

- **New energy field**

Solar cell substrates, fuel cell components and high-temperature reaction vessels. For example, polyimide foam for lithium battery insulation.

● **Chemical & Medical**

Corrosion-resistant pipes, reactor linings and biocompatible medical devices. For example, acid and alkali resistant piping in the chemical industry.

Item	Acceptance requirements	Unit
Color	Brownish yellow	/
Rockwell hardness	45-65	HRE
Notch impact strength	≥ 100	Kj/m ²
Tensile strength	≥ 100	MPa
Elongation at break	≥ 8.0	%
Bending strength	≥ 100	MPa
Modulus of elasticity	≥ 2600	MPa
Density	1.41	g/cm ³
Water absorption	0.16	%
Surface resistivity	$> 10^{12}$	Ω/sq

