

**Technical Data: TPU (Thermoplastic Polyurethane)**

**Product Description**

**Define and Grades**

Injection-molded TPU (Thermoplastic Polyurethane) is a versatile thermoplastic material known for its excellent elasticity, abrasion resistance, and durability. It can be molded into various shapes, making it ideal for flexible and impact-resistant components in diverse industries.

Our grades of injection molded TPU (Thermoplastic Polyurethane) used for injection molding parts include:

- General-Purpose TPU
- High-Elasticity TPU
- Wear-Resistant TPU
- UV-Resistant TPU
- Flame-Retardant TPU



**Features and Applications**

Grade	Features	Applications
General-Purpose TPU	- Good balance of flexibility and toughness - Abrasion resistance - Chemical resistance	Seals, gaskets, footwear, automotive components
High-Elasticity TPU	- Exceptional elasticity and resilience - High tear strength	Shock-absorbing components, medical tubing, sportswear
Wear-Resistant TPU	- Excellent abrasion resistance - Durability - Low-temperature flexibility	Conveyor belts, industrial wheels, footwear
UV-Resistant TPU	- Resistance to UV radiation and weathering - Outdoor durability	Outdoor equipment, automotive exterior parts
Flame-Retardant TPU	- Flame resistance - Low smoke emissions - Electrical insulating properties	Fire safety equipment, electrical enclosures

**Physical and Mechanical**

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm <sup>3</sup> )	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(°C)	(%)	(HRB)
General-Purpose TPU	1.1	30	600	800	40	50	60	2	80
High-Elasticity TPU	1.15	40	800	1000	50	80	70	1.5	90
Wear-Resistant TPU	1.12	35	650	900	45	60	65	1.8	85
UV-Resistant TPU	1.13	33	620	850	42	55	65	1.7	82
Flame-Retardant TPU	1.14	32	610	820	41	45	70	1.9	78

**Note**

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers. Tel | +86 18926788217 | Web | [www.newayprecision.com](http://www.newayprecision.com) | Contact Neway



### Benefits of Material Grades

#### General-Purpose TPU

Applications: General-purpose TPU is versatile and finds use in various applications due to its balanced flexibility, toughness, and chemical resistance. It is commonly used in seals, gaskets, footwear, and automotive components.

Reasons for Popularity: Its popularity arises from its versatility and suitability for various industries. General-purpose TPU offers an excellent balance of flexibility and durability, making it a dependable choice for many applications.



#### High-Elasticity TPU



Applications: High-elasticity TPU is selected for applications demanding exceptional elasticity and resilience. It is commonly used in shock-absorbing components, medical tubing, and sportswear.

Reasons for Popularity: Its popularity is due to its outstanding ability to stretch and rebound, making it ideal for applications requiring repeated flexing and stretching. It ensures product longevity and comfort.

#### Wear-Resistant TPU

Applications: Wear-resistant TPU is essential for applications subjected to abrasive wear and requiring durability. It is used in conveyor belts, industrial wheels, and footwear.

Reasons for Popularity: Its popularity stems from its excellent resistance to abrasion and ability to withstand harsh wear conditions. This makes it a dependable choice for parts exposed to mechanical wear.



#### UV-Resistant TPU



Applications: UV-resistant TPU is preferred for outdoor applications requiring UV radiation and weathering resistance. It is used in outdoor equipment, automotive exterior parts, and more.

Reasons for Popularity: Its popularity arises from its ability to maintain its properties under prolonged exposure to sunlight and harsh environmental conditions. It ensures product longevity and durability in outdoor settings.

#### Flame-Retardant TPU

Applications: Flame-retardant TPU is crucial in applications where fire safety is a concern. It is used in fire safety equipment and electrical enclosures.

Reasons for Popularity: Its popularity is driven by its flame resistance, low smoke emissions, and electrical insulating properties. Flame-retardant TPU ensures safety in environments where fire risks exist.



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