

# Thermoplastic Polyurethane Elastomer (TPU)

## Application

Molding method		Application
Injection molding	Automotive parts	Ball joint, Dust cover, Tire chains, Side molding
	Machinery/Industrial components	O-ring, Sealing materials, Gears, Connector
	Sporting goods	Sports shoes, Fin, Goggles
	Others	Watch band, Caster, Roller, Heel top piece of shoes
Extrusion molding	Hose/ Tube	Pressure-resistant hose, Tube, Inner part of fire hose
	Belt	Conveyor belt, Air mattress, Tarpaulin, Driving belt, Round belt
	Electrical wire/ Cable	Electrical wire / Cable covering, Computer wiring, Curl cord
	Others	Ropes, Medical disposables
Calendar molding		Conveyor belt, Film, Flexible container

## Characteristics

TPU for molding, developed with our original technology

- The best abrasion-resistance and the highest level of strength and elongation, compared with other elastomers based on polyester, polyolefin and polystyrene.
- Settable shore hardness covering a wide range of variation.
- Free from vulcanization process.
- High recoverability and recyclability of scraps.
- Well-balanced characteristics, such as cold-resistance and oil-resistance.
- An abundant product grade with high functionality as shown below, and also capable of coloring various resins by using our CP series.

## Representative Products

### Standard grade

Product name	Polyol	Characteristics
P-1000	Ester	General-purpose grade
P-7000		Enhanced low temperature properties
P-2000	Ether	Hydrolysis-resistance, Antibacterial activity
P-4000	Caprolactone	Excellent in injection moldability
P-800	Polycarbonate	Hydrolysis-resistance, Antibacterial activity, Heat-resistance

### Highly functional grade

Product name	Characteristics
PH (Heat-resistant type)	<p><b>Higher heat-resistance compared with conventional TPU</b></p> <ul style="list-style-type: none"> <li>• Less compression strain under high temperature, and higher softening point.</li> <li>• High resistance against heated oil/grease.</li> <li>• Wide application range because of fewer changes in property in wide temperature range.</li> </ul>
PS (Non-adhesive type)	<p><b>Characteristics of both silicone and TPU</b></p> <ul style="list-style-type: none"> <li>• Low adhesion and excellent releasability.</li> <li>• Wide application range because of less decrease in elastic modulus under high temperature and fewer change in shore hardness under low temperature.</li> </ul>
PM (Moisture-permeable type)	<p><b>Higher moisture-permeability (2~3 times as compared with conventional TPU)</b></p> <ul style="list-style-type: none"> <li>• Applicable to non-porous materials.</li> <li>• Water-swelling and non-swelling types.</li> </ul>