

**Technical Data: Nylon-PA**

**Product Description**

**Define and Grades**

What Is injection molded Nylon (PA)?

Injection molded Nylon (PA) is a thermoplastic polymer renowned for its high mechanical strength, toughness, and wear resistance. It's used for automotive components and consumer goods.

Our Injection Molded Nylon (PA) Grades

Neway provides injection molding services with multiple grades of Nylon, including:

- PA6 (Nylon 6)
- PA66 (Nylon 66)
- PA11 (Nylon 11)
- PA12 (Nylon 12)
- PA46 (Nylon 46)



**Features and Applications**

Grade	Features	Applications
PA6	High toughness, good impact resistance	Automotive parts, gears, bearings
PA66	Excellent strength, stiffness, and heat resistance	Structural components, electrical connectors
PA11	High flexibility, resistance to chemicals	Fuel lines, hoses, cable insulation
PA12	Low water absorption, good chemical resistance	Medical devices, packaging materials
PA46	Exceptional heat resistance, mechanical strength	High-performance engineering applications

**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)	(%)	(Rockwell R)
PA6 (Nylon 6)	1.14	80	50	2800	110	70	70	1.5	85
PA66 (Nylon 66)	1.14	170	50	2300	210	80	80	1.2	85
PA11 (Nylon 11)	1.05	55	300	1100	70	100	80	0.5	75
PA12 (Nylon 12)	1.01	60	250	1500	90	110	140	1.5	75
PA46 (Nylon 46)	1.14	250	4	3300	290	40	280	1	75

**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



# PA Injection Molding

## Nylon-PA

### NEWAY PRECISION WORKS

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#### Benefits of Neway ABS Grades

##### PA6 (Nylon 6)

**High Toughness and Impact Resistance:** PA6 exhibits excellent toughness and impact resistance, making it suitable for applications where parts are subjected to dynamic loads, such as gears, bearings, and automotive components.

**Good Abrasion Resistance:** The abrasion resistance of PA6 makes it an excellent choice for products requiring wear resistance. It is commonly used in conveyor components, wear pads, and machine parts.

**Good Chemical Resistance:** PA6's resistance to various chemicals makes it suitable for applications in contact with fluids, chemicals, and oils. It is used in components for chemical processing equipment and oil reservoirs.



##### PA11 (Nylon 11)



**High Flexibility and Impact Resistance:** PA11 offers exceptional flexibility and impact resistance, making it suitable for applications requiring parts to withstand dynamic stresses. It is used in flexible tubing, hoses, and cable insulation.

**Resistance to Chemicals and Hydrolysis:** PA11's resistance to various chemicals, oils, and hydrolysis makes it suitable for applications exposed to harsh environments. It finds use in fuel lines, oil reservoirs, and chemical handling equipment.

**Biocompatibility:** Due to its biocompatibility, PA11 is used in medical applications such as surgical instruments, catheters, and implants, where it interacts safely with the human body.

##### PA12 (Nylon 12)

**Low Moisture Absorption:** PA12's low moisture absorption results in stable properties in humid environments, making it suitable for gears, bearings, and bushings.

**Chemical Resistance:** Its resistance to chemicals and oils makes it suitable for fuel systems, chemical containers, and oil reservoirs.

**Impact Strength at Low Temperatures:** PA12 retains impact strength in cold temperatures, making it used in snowmobile parts, winter sports equipment, and automotive component



##### PA46 (Nylon 46)



**High Tensile Strength:** PA46 offers exceptional tensile strength, making it suitable for applications requiring strong mechanical properties, like automotive and industrial components.

**Low Tensile Elongation:** Its low elongation makes it ideal for applications where dimensional stability is essential, such as precision parts and components.

**High Heat Deflection Temperature:** PA46's high heat deflection temperature makes it valuable for applications requiring stability at elevated temperatures, including automotive under-the-hood parts and industrial equipment.

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