

Technical Data: Ultem (PEI)

Product Description

Define and Grades

Polyetherimide (PEI) is an advanced thermoplastic used in injection molding. It exhibits outstanding heat resistance, high mechanical strength, and excellent chemical resistance, making it a preferred choice for demanding industrial applications.

Common Grades of PEI Used for Injection Molding at Neway:

- Ultem 1000
- Ultem 1010
- Ultem 2300
- Ultem 2210
- Ultem 2100
- Ultem 2200



Features and Applications

Grade	Features	Applications
Ultem 1000	High heat resistance, excellent electrical insulation, chemical resistance	Aerospace components, electrical insulators, medical instruments
Ultem 1010	High heat resistance, good chemical resistance, biocompatible (FDA compliant)	Medical and dental devices, food contact parts, aerospace components
Ultem 2300	Enhanced chemical resistance compared to Ultem 1000	Chemical processing equipment, electrical connectors, automotive components
Ultem 2210	Enhanced heat resistance and dimensional stability	Semiconductor equipment, electrical connectors, automotive components
Ultem 2100	Enhanced heat resistance and chemical resistance	Aerospace components, electrical connectors, medical instruments
Ultem 2200	Enhanced heat resistance and dimensional stability	Aerospace components, electrical insulators, medical devices

Physical and Mechanical

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm ³)	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(°C)	(%)	(Rockwell R)
Ultem 1000	1.27	75	4.2	2.8	110	60	215	0.5 - 0.7	R112
Ultem 1010	1.27	75	4.2	2.9	110	85	215	0.5 - 0.7	R119
Ultem 2300	1.32	90	3.5	3.3	122	115	215	0.5 - 0.7	R120
Ultem 2210	1.27	92	5.1	3.7	135	110	215	0.5 - 0.7	R126
Ultem 2100	1.27	80	4.3	2.9	125	80	215	0.5 - 0.7	R119
Ultem 2200	1.27	105	2.5	4.1	145	140	215	0.5 - 0.7	R126

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 | Contact Neway



PEI Injection Molding

Ultem

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Benefits of Material Grades

Ultem 1000

High Heat Resistance: Ultem 1000 exhibits excellent heat resistance with a heat deflection temperature of 215°C, making it suitable for applications exposed to high temperatures.

Good Electrical Insulation: It possesses good electrical insulating properties, crucial in electrical and electronic components.

Dimensional Stability: Ultem 1000 maintains its shape and dimensions even under elevated temperatures, ensuring application precision.



Ultem 2300



Improved Impact Strength: Ultem 1010 offers improved impact strength compared to Ultem 1000, with an Izod impact strength of 85 J/m.

High Chemical Resistance: It has excellent resistance to various chemicals, making it ideal for applications exposed to aggressive environments.

Similar Heat Resistance: Like Ultem 1000, it also maintains high heat resistance.

Ultem 2210

High Tensile Strength: Ultem 2300 offers a higher tensile strength of 90 MPa, enhancing mechanical performance.

High Flexural Modulus: It has a flexural modulus of 3.3 GPa, making it stiff and suitable for structural applications.

Excellent Dimensional Stability: Ultem 2300 maintains tight tolerances and dimensional stability.



Ultem 2100



Tensile Elongation: Ultem 2210 exhibits a higher tensile elongation of 5.1%, providing some flexibility.

High Flexural Strength: It offers a flexural strength of 135 MPa, making it resistant to bending or breaking.

Good Chemical Resistance: Ultem 2210 maintains good chemical resistance while offering flexibility.

Ultem 2200

Balanced Properties: Ultem 2100 balances mechanical strength and impact resistance.

Heat Resistance: It maintains a heat deflection temperature of 215°C, making it suitable for high-temperature environments.

Electrical Insulation: Similar to Ultem 1000, it provides good electrical insulation.



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