



# ULTRA PERFORMANCE STRUCTURAL COMPOUNDS

- ▶ Strength and stiffness performance competitive with metals or thermosets
- ▶ Temperature and chemical resistance for demanding environments
- ▶ Reduce weight, gain design efficiencies, and trim manufacturing time and cost

## ADDITIONAL BENEFITS

- Available in PEEK, PPA, PPS, and PEI high temperature resins
- Inherently flame retardant with low smoke toxicity and heat release
- Reinforced with short carbon fiber, short or very long glass fiber
- Fiber loadings from 20-50% to meet varying application requirements
- Mechanical properties that lead the industry in performance
- Combine wear resistance or color properties into a single ready-to-process material
- Customizable using RTP Company's expertise in working with high temperature and fiber reinforced compounds

Imagine high performance, injection moldable materials that close the performance gap between plastics and metals... At RTP Company, we not only imagined them, we've made them a reality.

Ultra Performance Structural Compounds take advantage of RTP Company's expertise in high temperature polymers and fiber reinforced materials to obtain elevated mechanical properties that lead the industry for fiber reinforced high temperature thermoplastics.

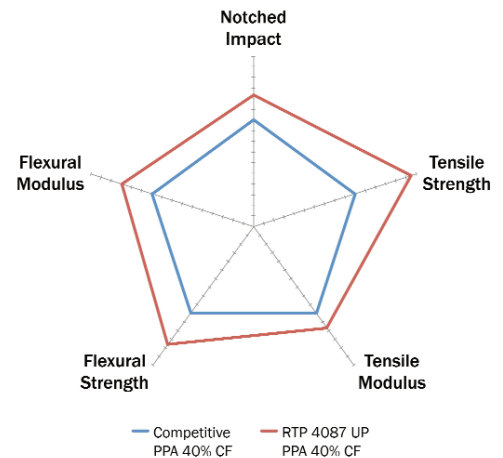
Mechanical performance combined with the thermal and chemical resistance attributes of PEEK, PPA, PPS, and PEI resins makes these compounds an ideal choice for applications that experience demanding usage environments in energy, industrial, aerospace, automotive, and healthcare markets.

Employing short carbon fiber, short glass fiber, or very long glass fiber at loadings from 20 to 50% allows performance to be tailored to individual application requirements and make these products a competitive alternative to aluminum, zinc, and magnesium metals.

Across the board performance improvements in strength and stiffness provide added confidence and a higher design safety factor when replacing other materials. Additionally, lower densities make them a perfect choice for weight critical applications.

Ultra Performance Structural Compounds also provide the design freedoms and production advantages of an injection moldable material. They allow design optimization, part consolidation, and one-step production of net shapes that eliminates expensive and time-consuming secondary operations.

Ultra Performance Structural Compounds... another innovation from RTP Company: your global compounder of custom engineered thermoplastics.



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# ULTRA PERFORMANCE STRUCTURAL COMPOUNDS

## Benefit Comparison to Competitive Materials

### Versus Aluminum and Magnesium Metals

- Better chemical resistance
- Better corrosion resistance
- Higher strength-to-weight ratio
- Higher fatigue resistance
- Easier to fabricate
- Eliminate metal galvanic reactions

### Versus Stock Shape Systems

- Shorter production time
- Lower scrap rate
- Tighter net shape tolerances
- Eliminate post-curing
- Lower per part cost
- Higher strength and stiffness
- Better chemical resistance

RTP Company has the industry's broadest product portfolio of high temperature compounds using all available reinforcements. Our experience with these products was the springboard for Ultra Performance Structural Compounds which are the highest performing products available.

PRODUCT	POLYMER	REINFORCEMENT	LOADING %	DENSITY g/cm <sup>3</sup>	IZOD NOTCHED IMPACT KJ/m <sup>2</sup>	TENSILE STRENGTH MPa	TENSILE MODULUS GPa
RTP 2205 HF UP	PEEK	Glass Fiber	30	1.52	10.0	195	12.5
RTP 2209 HF UP	PEEK	Glass Fiber	50	1.73	12.0	240	19.5
RTP 2285 HF UP	PEEK	Carbon Fiber	30	1.41	8.0	295	30.5
RTP 2287 HF UP	PEEK	Carbon Fiber	40	1.45	7.0	305	40.0
VLF 82209	PEEK	Very Long Fiber	50	1.70	18.0	230	17.0
RTP 2105 UP	PEI	Glass Fiber	30	1.50	8.0	190	11.5
RTP 2109 UP	PEI	Glass Fiber	50	1.70	10.0	200	18.0
RTP 2185 UP	PEI	Carbon Fiber	30	1.39	7.0	240	28.5
RTP 2187 UP	PEI	Carbon Fiber	40	1.43	7.0	255	37.0
VLF 82109	PEI	Very Long Fiber	50	1.68	20.0	195	17.8
RTP 4005 UP	PPA	Glass Fiber	30	1.44	13.0	210	12.5
RTP 4009 UP	PPA	Glass Fiber	50	1.64	15.0	285	20.0
RTP 4085 UP	PPA	Carbon Fiber	30	1.33	8.0	345	33.0
RTP 4087 UP	PPA	Carbon Fiber	40	1.39	9.0	360	41.5
VLF 84009	PPA	Very Long Fiber	50	1.64	35.0	275	18.0
RTP 1305 UP	PPS	Glass Fiber	30	1.58	7.5	180	13.0
RTP 1309 UP	PPS	Glass Fiber	50	1.77	10.5	195	20.0
RTP 1385 UP	PPS	Carbon Fiber	30	1.45	7.5	255	28.5
RTP 1387 UP	PPS	Carbon Fiber	40	1.48	7.5	260	40.5
VLF 81309	PPS	Very Long Fiber	50	1.73	25.0	170	18.5

## RTP Company: Your Global Compounder Of Custom Engineered Thermoplastics

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