

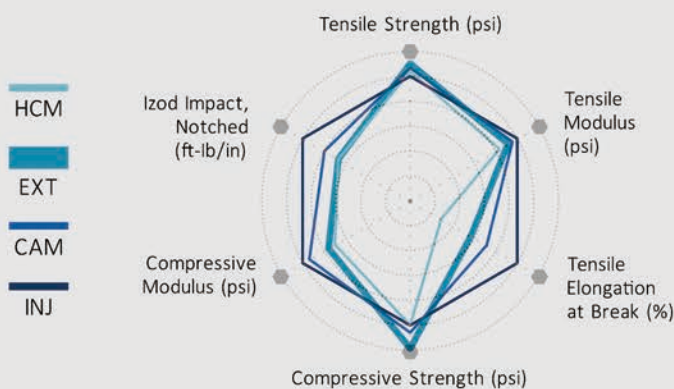


EXTRUSION

Polymics® has added its stock shape portfolio with expansion in specialty pressure and free extrusion. This compliments and fulfills our complete offering of material processing. With in-house production for extrusion, compression molding, centrifugally assisted molding and injection molding, Polymics can deliver our “Concept To Solution®” products in the most cost effective form.

Utilizing innovations in resin formulation, tool design and processing technology Polymics delivers the forms needed to achieve and maintain customer specifications.

TYPICAL PROPERTY VARIATIONS BY PROCESS



Based on unfilled PEEK, processed by listed process mentioned in machine direction.

MATERIAL CAPABILITIES

POLYKETONES PEEK, PEKK, PEK, PAEK, PEKEK	Unfilled, Glass, Carbon, PTFE and Wear Enhanced Grades
ARYLMAX® IA-SERIES, MELT PROCESSABLE HIGH TEMPERATURE ALLOYS	Unfilled, Glass, Carbon and Wear Enhanced
FLUOROPOLYMERS PVDF, ECTFE	Glass, Carbon and Wear Enhanced Grades
ULTEM (PEI)	Glass, Carbon, Wear Enhanced
POLYSULPHONES PSU, PPSU, PES, PAES	Glass, Carbon and Wear Grades
PPS BRANCHED AND LINEAR POLYMERS	Glass, Carbon, Wear Enhanced, Ductile and Higher Temperature Grades
OTHER ENGINEERING POLYMERS	PPO, PC, PET, PBT, TPX

Size and shape capabilities of individual materials may vary. Contact Polymics, Ltd. for details. Custom materials/sizes also available.

ADVANTAGES OF POLYMICS EXT

HIGH SPEED, HIGH VOLUME AT RELATIVELY LOW PRODUCTION COST

COMPREHENSIVE PORTFOLIO OF HIGH PERFORMANCE POLYMERS, ALLOYS AND THEIR SPECIALTY COMPOUNDS.

WIDE RANGE OF PROFILES AVAILABLE INCLUDING TUBES, PLATES, RODS, AND THIN SHEETS

PROTOTYPE DIMENSIONS AVAILABLE

IMPROVED PART YIELDS BY ALLOWING CUSTOMER TO ORDER OPTIMUM SIZE LENGTHS AND WIDTHS

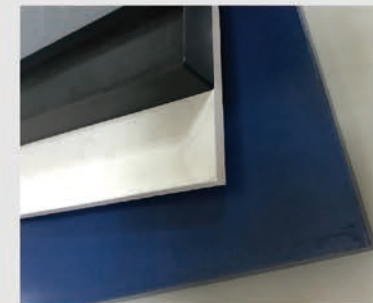
FOCUS ON ENABLING CUSTOM APPLICATION TO TRANSITION FROM DEVELOPMENT TO POTENTIAL INJECTION MOLDING OR OTHER MASS PRODUCTION REQUIREMENTS

EXTRUSION



CURRENT PROCESSES INCLUDE BUT ARE NOT LIMITED TO

FILM / SHEET	Up to 24" wide 0.020" - 0.250" thick Cut to desired length
PLATE / SLAB	Up to 24" wide 0.250" – 4" thick Cut to desired length (4' is stocked as standard for thinner gauges)
ROD	Up to 4" diameter Stocked in 8' lengths for smaller diameters
TUBES	OD 3" - 15" ID 2" – 12" Cut to desired lengths



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POLYMICS' STANDARD POLYIMIDE (PI) SIZES / SHAPES

PROPERTIES	ASTM METHOD	UNITS	PPS Extruded	PEEK Extruded	PEEK 30GF Extruded	PEEK 10 PTFE Extruded	PEEK 30CF Extruded	PEEK WR Extruded	Arylmax IA-850 Extruded
Specific Gravity	D-792	g/cm ³	1.35	1.30	1.51	1.35	1.40	1.48	1.35
Tensile Strength at Yield	D-638	M Pa	75	95	—	80	—	—	90
Tensile Strength at Break	D-638	M Pa	—	—	180	—	215	130	—
Elongation at Break	D-638	%	4	25	2.5	15	1.5	1.5	3
Tensile Modulus	D-638	M Pa	3700	3000	9500	3000	18500	9500	3700
Flexural Modulus	D-790	M Pa	3600	4100	10000	—	20000	8100	4000
Melting Point	D-3418	°C	280	343	343	300	343	343	353
Glass Transition Temperature	D-3418	°C	90	143	143	143	143	143	175
Heat Distortion Temperature	D-648	°C	110	140	315	—	315	277	—
Coefficient of Linear Thermal Expansion	D-150	10 ⁻⁵ /K	5	5	2	—	1.5	2.2	—

SUMMARY

Extruded high performance polymers and their compounds provide wide range of profiles such as plates, tubes, rods, and thin sheets from prototyping to production of parts and components. However, custom profiles are often limited in availability in materials of choices or can be cost prohibitive for small runs. Focusing on it's "Concept to Solution®" approach, Polymics' EXT operation serves to enable our customers' uncompromised developmental and commercial application needs.