

Principal Features of MELDIN® 3100

Excellent Mechanical Properties

MELDIN® 3100 materials have excellent mechanical properties, in tension and compression, and maintain an impressive level of these attributes as operating temperatures increase. These properties add extreme strength and rigidity to component parts, even in narrow cross-section.

Broad Design Flexibility

Since MELDIN® 3100 components are manufactured by an injection molding process, extremely intricate as-molded part designs are available. Injection molding allows for close tolerances, without the complication and cost of secondary machining.

No Post Cure

Typically, MELDIN® 3100 molded components require no post cure. Product deliveries are enhanced through reduced lead times and brief manufacturing cycles.

Good Chemical Resistance

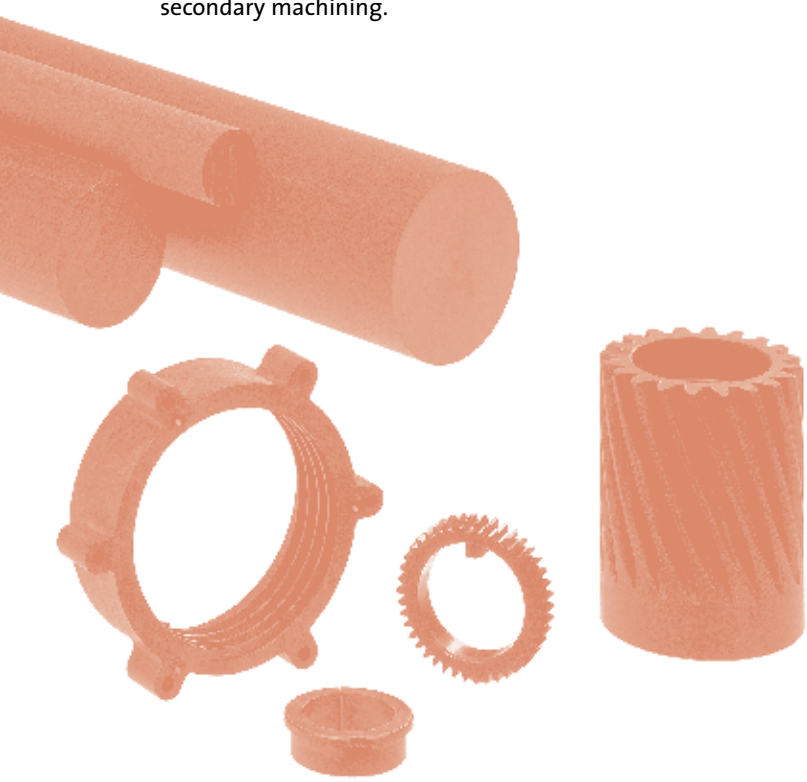
MELDIN® 3100 is resistant to a great many chemicals, fuels, and lubricating fluids. This outstanding chemical resistance provides superior performance in a variety of aggressive environments.

Superior Weld Line Strength

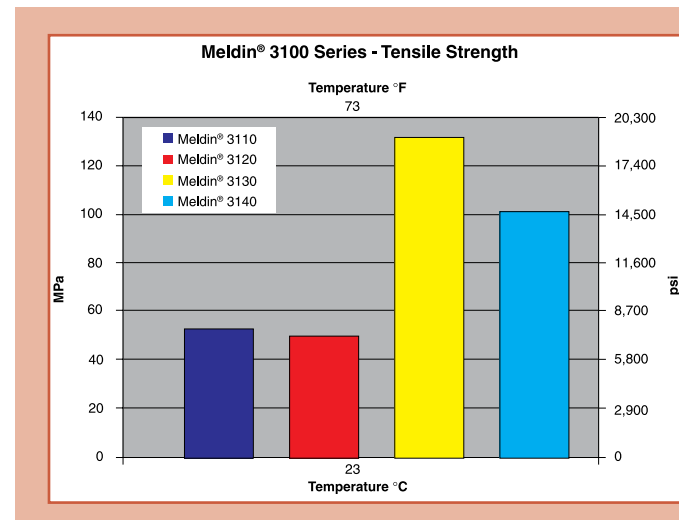
Unlike other high performance materials, MELDIN® 3100 exhibits extremely strong weld lines. With MELDIN® 3100 components, you don't have to be concerned about molded part integrity.

Complete Mating Surface Compatibility

There are MELDIN® 3100 bearing grades available for all mating surfaces with hardnesses of Rockwell B25 and higher.



Technical Graphs



MELDIN® 3100 Compounds



MELDIN® 3110

This bearing formulation has a very low coefficient of friction and is particularly well suited for use with soft mating surface materials such as aluminum and soft stainless steel.

MELDIN® 3120

This excellent multi-purpose, wear-resistant material that is suitable for bearing, thrust washer, and piston ring applications. It also has a low coefficient of thermal expansion.

MELDIN® 3130

MELDIN® 3130 components provide good strength and stiffness in addition to excellent high velocity performance. This formulation can be used with both hard or soft mating surfaces.

MELDIN® 3140

MELDIN® 3140 is an ideal thrust washer material and is well suited for thrust washer applications. Its high strength and stiffness, combined with its excellent heat dissipation properties, make it an excellent choice for high pressure loading applications.

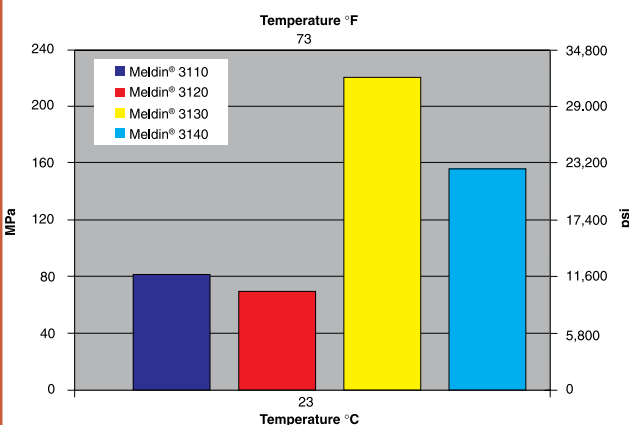
Product availability:

- Basic shapes
- Finished parts

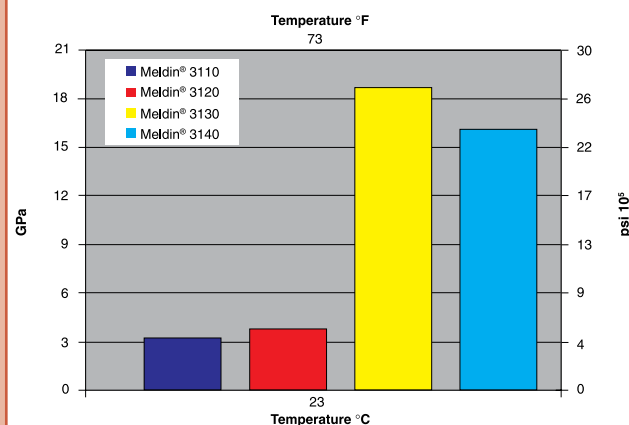
Manufacturing processes:

- Compression molding
- Injection molding
- Direct forming
- Machined parts

Meldin® 3100 Series - Flexural Strength



Meldin® 3100 Series - Flexural Modulus

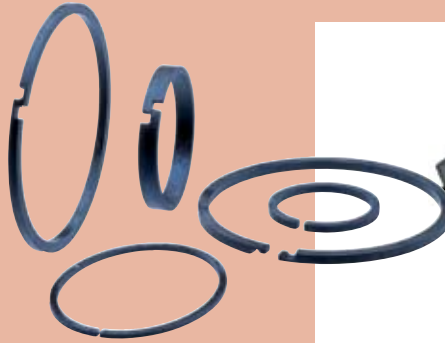


Applications of MELDIN® 3100



Heavy Equipment Applications

MELDIN® 3100 series mechanical components are used on heavy duty industrial rotating equipment. Their exceptional wear resistance and load bearing properties make these materials the best choice for applications requiring heat dissipation and dry-running characteristics.



Compressor Piston Rings

MELDIN® 3100 series materials offer a very wide chemical compatibility and excellent wear life versus classical cast iron solutions.



Automotive Interiors

In automotive interior applications such as power seats, MELDIN® 3100 components are used in areas where there is high pressure loading in a small amount of space. Their ability to operate without lubrication allows for quiet operation of electric motors, and use of small motor sizes.

Typical Properties of MELDIN® 3100

PROPERTY	TEST METHOD	ENGLISH (METRIC)	MELDIN® 3110	MELDIN® 3120	MELDIN® 3130	MELDIN® 3140
MECHANICAL @ RT						
Tensile Strength	ASTM D638	psi (MPa)	7,880 (54.3)	7,353 (50.7)	19,376 (133.59)	14,946 (103.05)
Tensile Modulus	ASTM D638	psi x 10 ⁵ (GPa)	1.71 (1.18)	1.84 (1.27)	5.55 (3.83)	5.66 (3.91)
Elongation	ASTM D638	%	7.5	6.3	5.4	6.6
Flexural Strength	ASTM D790	psi (MPa)	11,950 (82.4)	10,098 (69.62)	32,266 (222.47)	22,746 (156.83)
Flexural Modulus	ASTM D790	psi x 10 ⁵ (GPa)	4.61 (3.18)	5.41 (3.74)	26.83 (18.52)	23.06 (15.91)
Compressive Strength	ASTM D695	psi (MPa)	14,516 (100.08)			
Compressive Modulus	ASTM D695	psi x 10 ⁵ (GPa)	2.58 (1.78)			
Izod Impact Strength (notched)	ASTM D256	Ft-lb/in (J/m)	0.38 (20.28)			
THERMAL						
Coefficient of Thermal Expansion	ASTM D696	in/in/°F (m/m/°C) x 10 ⁻⁵	2.2 (3.9)			
Heat Deflection Temperature @ 264 psi (1.8 MPa)	ASTM D648	°F (°C)	418 (214)	422 (217)	421 (216)	430 (221)
Tg		°F (°C)	451 (233)	451 (233)	451 (233)	451 (233)
GENERAL						
Specific Gravity	ASTM D792	—	1.4	1.4	1.44	1.65
Hardness Shore D	ASTM D2240	—	80			
Hardness Rockwell M	ASTM D785	—	85			
TRIBOLOGICAL						
Coefficient of Friction	Saint-Gobain	—	0.20			
Wear Factor K	ASTM D3702	[(in ³ min/(ft.lb.hr))] E ⁻¹⁰ [mm ³ /Nm]E ⁻⁸	5.93 (11.95)			