

PRODUCT TECHNICAL DATA SHEET

KyronMAX® S-2212

Nylon Based Structural Compound

Product benefits

- High physical strength
- Ductility
- Heat resistance
- High wear resistance
- Chemical resistance of hydrocarbons
- Low coefficient of friction.

Industrial/Application Examples

- Automotive – bushings, washers, pistons, brackets, handles
- Aerospace – latches, rings, hinges, spacers, seals, adapters
- Electrical – pins, fasteners, end effectors, connectors, panels
- Medical – clamps, vanes, housings, bushings, gears, valves
- Energy – seals, bearings, plugs, umbilical's, back-up rings
- Industrial – valve plates, column packing, gears, valve seats

| MECHANICAL | Test Method | English | | Metric | |
|-----------------------------------|-------------|---------------|-------------------|---------------|-------------------|
| | | Typical Value | Unit | Typical Value | Unit |
| Specific Density | ASTM D792 | 1.19 | g/cm ³ | 1.19 | g/cm ³ |
| Tensile Strength | ASTM D638 | 33,500 | psi | 231 | MPa |
| Tensile Modulus of Elasticity | ASTM D638 | 1,750 | ksi | 12 | Gpa |
| Tensile Elongation | ASTM D638 | 3.20 | % | 3.20 | % |
| Flexural Strength | ASTM D790 | 48,500 | psi | 334 | MPa |
| Flexural Modulus of Elasticity | ASTM D790 | 1,700 | ksi | 12 | GPa |
| Shear Strength | ASTM D732 | 12,860 | psi | 89 | MPa |
| Compressive Strength | ASTM D695 | 24,000 | psi | 165 | MPa |
| Compressive Modulus of Elasticity | ASTM D695 | 680 | ksi | 5 | Gpa |
| Hardness, Shore D | ASTM D2240 | 87 | | 87 | |
| Notched Izod Impact | ASTM D256 | 1.2 | ft-lb/in | 64 | J/m |
| Unnotched Izod Impact | ASTM D4812 | 12 | ft-lb/in | 636 | J/m |

THERMAL

| | | | | | |
|--|------------|-----|----|-----|----|
| Glass Transition (T _g) | ASTM D3418 | 122 | °F | 50 | °C |
| Melting Point | ASTM D3418 | 505 | °F | 263 | °C |
| Deflection Temperature at 1.8 MPa (264psi) | ASTM D648 | 482 | °F | 250 | °C |

ELECTRICAL

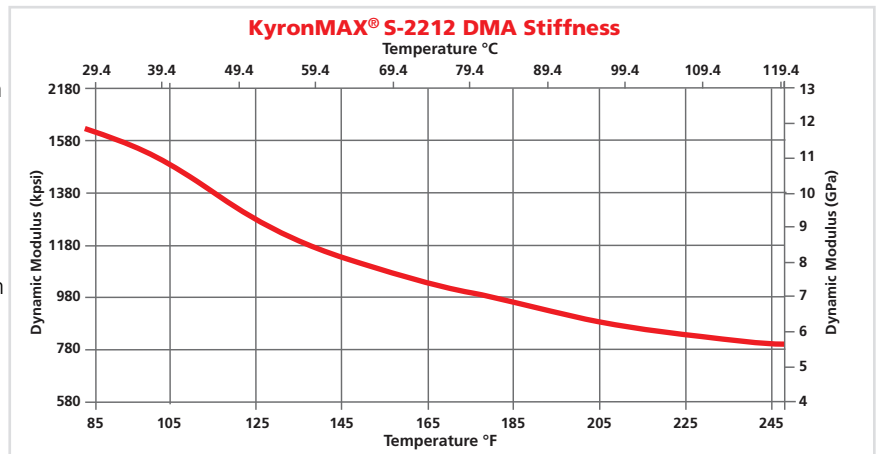
| | | | | | |
|---------------------|--------------------|------------------|--------|------------------|--------|
| Surface Resistivity | ASTM D257 | <10 ⁴ | ohm/sq | <10 ⁴ | ohm/sq |
| Flammability | UL 94 ¹ | HB | | HB | |

CHEMICAL

| | | | | | |
|--------------------|-----------|-------|---------|-------|---------|
| Moisture, 24 hours | ASTM D570 | 0.647 | % by wt | 0.647 | % by wt |
|--------------------|-----------|-------|---------|-------|---------|

KyronMAX® materials are lightweight and, when molded, parts are 75% lighter than steel and almost 40% lighter than aluminum. By utilizing the lower density of KyronMAX®, customers can simultaneously realize lower costs and lighter parts, while also taking advantage of unmatched tensile and toughness properties.

The better “practical toughness” values are achieved with lower filler loading, which increases the material’s elongation at yield. KyronMAX® molded parts are more likely to yield, rather than fracture under high-stress loads. KyronMAX® stronger fibers and lower filler loadings further elevate molded product performance with significantly better knit line strength compared to other filled polymers.



Aluminum bracket with half FEA analysis (left) and KyronMAX® final molded part (right). The FEA analysis is used to translate a metal part into a lightweight plastic molded part, while matching or exceeding the strength and stiffness of the original metal part.

Mitsubishi Chemical Advanced Materials (MCAM) can take your metal parts and use our proprietary Finite-Element Analysis (FEA) to engineer a high-performance product with KyronMAX® materials. MCAM’s unique FEA data offers a solution to accurately predict the mechanical performance of a part in real world applications with key features including mechanical stress, plastic injection molding flow, fatigue, and motion.

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1 Does not represent actual testing conducted by MCAM but is an estimated rating based on available data. The UL 94 Test is a laboratory test and does not relate to actual fire hazard.