

NOVALAC FM 3000

Phenolic

Vyncolit N.V.

Message:

FM 3000 is a self-lubricated cellulose reinforced phenolic molding compound, modified for applications requiring reduced friction and low wear.

| General Information | | | |
|---|------------------------------------|-------------------|-------------|
| Filler / Reinforcement | Fiber filler | | |
| Additive | Lubricant | | |
| Features | Good dimensional stability | | |
| | Low friction coefficient | | |
| | Low smoke | | |
| | Solvent resistance | | |
| | Good creep resistance | | |
| | alkali resistance | | |
| | Good wear resistance | | |
| | acid resistance | | |
| | Self-lubricating | | |
| Uses | Membrane key switch | | |
| | Pump parts | | |
| | Gear | | |
| | Electrical/Electronic Applications | | |
| | Electrical appliances | | |
| | Power/other tools | | |
| | Connector | | |
| | Application in Automobile Field | | |
| | Shell | | |
| Appearance | Black | | |
| Forms | Particles | | |
| Processing Method | Resin transfer molding | | |
| | Compression molding | | |
| | Injection molding | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity | 1.45 | g/cm ³ | ASTM D792 |
| Molding Shrinkage - Flow (Compression Molded) | 0.40 | % | ASTM D955 |
| Water Absorption (23°C, 24 hr) | 0.50 | % | ASTM D570 |

| Hardness | Nominal Value | Unit | Test Method |
|--|-------------------------|----------|-------------|
| Rockwell Hardness (M-Scale) | 115 | | ASTM D785 |
| Mechanical | Nominal Value | Unit | Test Method |
| Tensile Strength (Break, Compression Molded) | 38.0 | MPa | ASTM D638 |
| Flexural Modulus (Compression Molded) | 7000 | MPa | ASTM D790 |
| Flexural Strength (Break) | 55.0 | MPa | ASTM D790 |
| Compressive Strength | 105 | MPa | ASTM D695 |
| Impact | Nominal Value | Unit | Test Method |
| Notched Izod Impact (Compression Molded) | 27 | J/m | ASTM D256 |
| Thermal | Nominal Value | Unit | Test Method |
| Deflection Temperature Under Load (1.8 MPa, Unannealed, Compression Molded) | 180 | °C | ASTM D648 |
| CLTE - Flow | 2.6E-5 | cm/cm/°C | ASTM E831 |
| Electrical | Nominal Value | Unit | Test Method |
| Dielectric Strength | | | ASTM D149 |
| -- ¹ | 10 | kV/mm | ASTM D149 |
| -- ² | 7.9 | kV/mm | ASTM D149 |
| Injection | Nominal Value | Unit | |
| Rear Temperature | 60.0 | °C | |
| Middle Temperature | 73.9 | °C | |
| Nozzle Temperature | 87.8 | °C | |
| Processing (Melt) Temp | 98.9 - 116 | °C | |
| Mold Temperature | 166 - 188 | °C | |
| Injection Pressure | 100 - 248 | MPa | |
| Holding Pressure | 30.0 - 89.6 | MPa | |
| Back Pressure | 4.83 - 15.2 | MPa | |
| Injection instructions | | | |
| Plastication: 50rpmInjection Time: 2 to 8 secHold Time: 1 to 5 sec/mmCure Time, 0.125 in: 5 to 12 sec/mmAll ASTM properties listed were tested in accordance with ASTM D5948.Powder Density, ASTM D1895: 0.45 g/cm ³ Water Absorption, ASTM D570, 48 hrs, 50°C: 1.2%Dielectric Strength, ASTM D149, 60 Hz, Method B, wet: 7.9 kV/mmDielectric Strength, ASTM D149, 60 Hz, Method A, wet: 10.2 kV/mm | | | |
| NOTE | | | |
| 1. | Method A (short time) | | |
| 2. | Method B (step by step) | | |

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