

# Vyncolit® RX®3-2-530

Diallyl Phthalate

Vyncolit N.V.

## Message:

3-2-530 is a long glass fiber reinforced, flame retardant, diallyl ortho-phthalate molding compound, which meets the requirements of ASTM D5948 Type GII-30F.

| General Information    |                             |      |             |
|------------------------|-----------------------------|------|-------------|
| Filler / Reinforcement | Long glass fiber            |      |             |
| Features               | Good dimensional stability  |      |             |
|                        | Moisture resistance         |      |             |
|                        | Antibacterial property      |      |             |
|                        | Solvent resistance          |      |             |
|                        | Impact resistance, high     |      |             |
|                        | Good electrical performance |      |             |
|                        | Good chemical resistance    |      |             |
|                        | alkali resistance           |      |             |
|                        | Good wear resistance        |      |             |
|                        | Fuel resistance             |      |             |
|                        | Heat resistance, high       |      |             |
|                        | acid resistance             |      |             |
| Uses                   | Membrane key switch         |      |             |
|                        | Aircraft applications       |      |             |
|                        | Insulating material         |      |             |
|                        | Connector                   |      |             |
|                        | Communication Equipment     |      |             |
| Agency Ratings         | ASTM D 5948, Type GII-30F   |      |             |
|                        | MIL C-24308                 |      |             |
| Appearance             | Brown                       |      |             |
|                        | Grey                        |      |             |
| Forms                  | flake                       |      |             |
| Processing Method      | Resin transfer molding      |      |             |
|                        | Compression molding         |      |             |
|                        | Injection molding           |      |             |
| Physical               | Nominal Value               | Unit | Test Method |

|                                                                             |                      |                   |                    |
|-----------------------------------------------------------------------------|----------------------|-------------------|--------------------|
| Specific Gravity                                                            | 1.76                 | g/cm <sup>3</sup> | ASTM D792          |
| Molding Shrinkage - Flow (Compression Molded)                               | 0.10 - 0.40          | %                 | ASTM D955          |
| <b>Mechanical</b>                                                           | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Tensile Strength (Break, Compression Molded)                                | 69.0                 | MPa               | ASTM D638          |
| Flexural Modulus (Compression Molded)                                       | 13800                | MPa               | ASTM D790          |
| Flexural Strength (Break)                                                   | 131                  | MPa               | ASTM D790          |
| Compressive Strength                                                        | 152                  | MPa               | ASTM D695          |
| <b>Impact</b>                                                               | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Notched Izod Impact (Compression Molded)                                    | 160                  | J/m               | ASTM D256          |
| <b>Thermal</b>                                                              | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Deflection Temperature Under Load (1.8 MPa, Unannealed, Compression Molded) | 260                  | °C                | ASTM D648          |
| CLTE - Flow                                                                 | 1.5E-5               | cm/cm/°C          | ASTM E831          |
| RTI Elec                                                                    | 130                  | °C                | UL 746             |
| RTI Imp                                                                     | 130                  | °C                | UL 746             |
| RTI                                                                         | 130                  | °C                | UL 746             |
| <b>Electrical</b>                                                           | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Dielectric Strength <sup>1</sup>                                            | 16                   | kV/mm             | ASTM D149          |
| Dielectric Constant                                                         |                      |                   | ASTM D150          |
| 1 kHz                                                                       | 4.10                 |                   | ASTM D150          |
| 1 MHz                                                                       | 3.90                 |                   | ASTM D150          |
| Dissipation Factor                                                          |                      |                   | ASTM D150          |
| 1 kHz                                                                       | 0.010                |                   | ASTM D150          |
| 1 MHz                                                                       | 0.019                |                   | ASTM D150          |
| Arc Resistance                                                              | 135                  | sec               | ASTM D495          |
| Comparative Tracking Index (CTI)                                            | 600                  | V                 | UL 746             |
| Comparative Tracking Index                                                  | 600                  | V                 | IEC 60112          |
| <b>Flammability</b>                                                         | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Oxygen Index                                                                | 40                   | %                 | ASTM D2863         |
| <b>Injection</b>                                                            | <b>Nominal Value</b> | <b>Unit</b>       |                    |
| Rear Temperature                                                            | 60.0                 | °C                |                    |
| Middle Temperature                                                          | 76.7                 | °C                |                    |
| Nozzle Temperature                                                          | 87.8                 | °C                |                    |
| Processing (Melt) Temp                                                      | 110 - 116            | °C                |                    |
| Mold Temperature                                                            | 160 - 182            | °C                |                    |
| Injection instructions                                                      |                      |                   |                    |

Plastication: 50rpmBack Pressure (gauge): slightInjection Pressure: set to give 5 to 15 sec injection timeHold Pressure: 1/2 of injection pressureCure Time, 0.125 in: 40 secWater Absorption, ASTM D570, 48 hrs, 50°C: 0.35%Flammability Ignition, ASTM D229: 110 secFlammability Burn, ASTM D229: 40 secDielectric Strength, ASTM D149, 60 Hz, Method B, wet: 15.8 kV/mmDielectric Constant, ASTM D150, 1000 Hz, wet: 4.1Dielectric Constant, ASTM D150, 1000000 Hz, wet: 3.9Dissipation Factor, ASTM D150, 1000 Hz, wet: 0.01Dissipation Factor, ASTM D150, 1000000 Hz, wet: 0.019Compression and Transfer Molding Conditions:  
Preforming Pressure: 8000 to 12000 psi  
Preheat Temperature: 220 to 230 °F  
Preheat Time: 45 sec  
Mold Temperature: 320 to 350 °F  
Compression Mold Pressure: 3500 to 6000 psi  
Transfer Mold Pressure: 2500 to 5000 psi  
Cure Time, 0.125 in: 45 to 70 sec

#### NOTE

1. Method B (step by step)

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