

## Technical Data Sheet

### Vitamide BF13 BLK 2421

Polyamide 6

#### Product Description

Vitamide BF13 BK 2421 is a Polyamide 6 material and is typically used in Injection Molding applications.

**Processing Method**      Injection Molding

| Typical Properties                                      | Nominal Value | Units              | Test Method |
|---------------------------------------------------------|---------------|--------------------|-------------|
| <b>Physical</b>                                         |               |                    |             |
| Density                                                 | 1.18          | g/cm <sup>3</sup>  | ISO 1183    |
| Viscosity Number, (96% H2SO4 (Sulphuric Acid))          | 145           | cm <sup>3</sup> /g | ISO 307     |
| <b>Mechanical</b>                                       |               |                    |             |
| Tensile Strength                                        | 70            | MPa                | ISO 527-2   |
| - Conditioned                                           | 45            | MPa                | ISO 527-2   |
| Tensile Strain at Break, (Type 1A, 5 mm/min)            | 3.5           | %                  | ISO 527-2   |
| Flexural Modulus, (2.0 mm/min)                          | 3300          | MPa                | ISO 178     |
| Tensile Stress at Break, (Type 1A, 5 mm/min)            | 70.0          | MPa                | ISO 527-2   |
| Tensile Modulus                                         |               |                    |             |
| (1 mm/min, Type 1A)                                     | 3500          | MPa                | ISO 527-1   |
| (1 mm/min, Type 1A) - Conditioned                       | 1300          | MPa                | ISO 527-1   |
| Flexural Stress, (2.0 mm/min, 5.8%)                     | 125           | MPa                | ISO 178     |
| Tensile Strain at Tensile Strength                      | 3             | %                  | ISO 527-2   |
| - Conditioned                                           | 30            | %                  | ISO 527-2   |
| <b>Impact</b>                                           |               |                    |             |
| Charpy Impact Strength - Notched                        |               |                    |             |
| (23 °C, Type 1, Edgewise, Notch A)                      | 4.0           | kJ/m <sup>2</sup>  | ISO 179     |
| (-30 °C, Type 1, Edgewise, Notch A)                     | 3.0           | kJ/m <sup>2</sup>  | ISO 179     |
| (23 °C, Type 1, Edgewise, Notch A) - Conditioned        | 8.0           | kJ/m <sup>2</sup>  | ISO 179     |
| Charpy Impact Strength - Unnotched                      |               |                    |             |
| (23 °C, Type 1, Edgewise)                               | 50            | kJ/m <sup>2</sup>  | ISO 179     |
| (-30 °C, Type 1, Edgewise)                              | 40            | kJ/m <sup>2</sup>  | ISO 179     |
| (23 °C, Type 1, Edgewise) - Conditioned                 | No Break      |                    | ISO 179     |
| <b>Thermal</b>                                          |               |                    |             |
| Vicat Softening Temperature                             |               |                    |             |
| (B (50N), 50 °C/h)                                      | 200           | °C                 | ISO 306     |
| (A (10N), 50 °C/h)                                      | 215           | °C                 | ISO 306     |
| Deflection Temperature Under Load Unannealed (0.45 MPa) | 175           | °C                 | ISO 75-2/B  |
| Deflection Temperature Under Load Unannealed (1.80 MPa) | 70            | °C                 | ISO 75-2/A  |
| <b>Electrical</b>                                       |               |                    |             |

|                                                |      |        |                      |
|------------------------------------------------|------|--------|----------------------|
| Comparative Tracking Index (CTI), (Solution A) | 600  | V      | IEC 60112            |
| <b>Flammable</b>                               |      |        |                      |
| Burning Rate                                   |      |        |                      |
| (2.00 mm)                                      | <100 | mm/min | FMVSS 302            |
| (2.00 mm)                                      | <100 | mm/min | ISO 3795             |
| Glow Wire Flammability Index                   |      |        |                      |
| (0.75 mm)                                      | 960  | °C     | IEC 60695-2-12       |
| (1.5 mm)                                       | 960  | °C     | IEC 60695-2-12       |
| (3.0 mm)                                       | 960  | °C     | IEC 60695-2-12       |
| Glow Wire Ignition Temperature                 |      |        |                      |
| (0.75 mm)                                      | 775  | °C     | IEC 60695-2-13       |
| (1.5 mm)                                       | 775  | °C     | IEC 60695-2-13       |
| (3.0 mm)                                       | 775  | °C     | IEC 60695-2-13       |
| <b>UL Information</b>                          |      |        |                      |
| Flame Rating                                   |      |        |                      |
| (1.6 mm)                                       | V-0  |        | UL 94                |
| (3.2 mm)                                       | V-0  |        | UL 94                |
| (0.8 mm)                                       | V-0  |        | UL 94                |
| Flammability Classification                    |      |        |                      |
| (0.8 mm)                                       | V-0  |        | IEC 60695-11-10, -20 |
| (1.6 mm)                                       | V-0  |        | IEC 60695-11-10, -20 |
| (3.2 mm)                                       | V-0  |        | IEC 60695-11-10, -20 |

| Injection Parameters   | Nominal Value | Units  |
|------------------------|---------------|--------|
| Drying Time            | 3.0 to 4.0    | hr     |
| Drying Temperature     | 80            | °C     |
| Suggested Max Moisture | 0.040 to 0.10 | %      |
| Screw Speed            | <250          | mm/sec |
| Processing (Melt) Temp | 240 to 260    | °C     |
| Injection Rate         | Slow-Moderate |        |
| Mold Temperature       | 60 to 100     | °C     |