

Ixef® BM-1524 polyarylamide

Ixef® BM-1524 is a 50% glass-fiber reinforced, halogen-free flame retardant polyarylamide developed for aircraft cabin interior applications that require high strength and stiffness, good surface finish, low moisture absorption, and excellent chemical and creep resistance.

the FAA 60-second vertical burn requirements per 14 CFR 25.853 Appendix F and toxic gas emission requirements per BSS7239 and ABD0031.

- Natural: Ixef® BM-1524 NT 000

This product is qualified under Boeing BMS8-270 Rev. L, Type I, Class 6, Form B, Grade 50 and meets

General

| | | |
|------------------------|--|---|
| Material Status | • Commercial: Active | |
| Availability | • Africa & Middle East • Asia Pacific • Europe | • Latin America • North America |
| Filler / Reinforcement | • Glass Fiber, 50% Filler by Weight | |
| Additive | • Flame Retardant | |
| Features | • Bromine Free • Chemical Resistant • Creep Resistant • Flame Retardant • Good Dimensional Stability • Halogen Free | • High Flow • High Strength • Low Moisture Absorption • Outstanding Surface Finish • Ultra High Stiffness |
| Uses | • Cell Phones • Electrical/Electronic Applications | • Housings |
| RoHS Compliance | • RoHS Compliant | |
| Appearance | • Colors Available | • Natural Color |
| Forms | • Pellets | |
| Processing Method | • Injection Molding | |

| Physical | Typical Value Unit | Test method |
|--------------------------------|------------------------|-----------------|
| Density | 1.69 g/cm ³ | ISO 1183 |
| Water Absorption (Equilibrium) | 0.28 % | ISO 62 |
| Mold Shrinkage - Flow | 0.10 to 0.30 % | Internal Method |

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| Mechanical | Typical Value | Unit | Test method |
|----------------------------|---------------|------|-------------|
| Tensile Modulus | 20000 | MPa | ISO 527-1 |
| Tensile Strength (Yield) | 248 | MPa | ASTM D638 |
| Tensile Elongation (Break) | 2.3 | % | ASTM D638 |
| Flexural Modulus | 19300 | MPa | ASTM D790 |
| Flexural Strength (Yield) | 376 | MPa | ASTM D790 |
| Compressive Modulus | 16500 | MPa | ASTM D695 |
| Compressive Strength | 328 | MPa | ASTM D695 |

| Impact | Typical Value | Unit | Test method |
|---------------------|---------------|------|-------------|
| Notched Izod Impact | 120 | J/m | ASTM D256 |

| Thermal | Typical Value | Unit | Test method |
|--|---------------|------|-------------|
| Deflection Temperature Under Load 1.8 MPa, Unannealed | 227 | °C | ISO 75-2/A |

| Electrical | Typical Value | Unit | Test method |
|--|---------------|------|-------------|
| Dielectric Constant ¹ (2.40 GHz) | 4.44 | | ASTM D2520 |
| Dissipation Factor ¹ (2.40 GHz) | 0.012 | | ASTM D2520 |
| Comparative Tracking Index (CTI) (3.00 mm) | > 600 | V | UL 746A |
| Comparative Tracking Index | > 600 | V | IEC 60112 |
| Comparative Tracking Index | PLC 0 | | UL 746 |
| High Amp Arc Ignition (HAI) | | | UL 746A |
| 0.400 mm | 37.6 | | |
| 0.750 mm | 53.6 | | |
| 1.50 mm | 70.2 | | |
| 3.00 mm | 95.4 | | |
| High Amp Arc Ignition (HAI) | | | UL 746A |
| 0.40 mm | PLC 2 | | |
| 0.75 mm | PLC 2 | | |
| 1.5 mm | PLC 1 | | |
| 3.0 mm | PLC 1 | | |
| High Voltage Arc Resistance to Ignition (HVAR) | | | UL 746A |
| 3.00 mm | PLC 0 | | |
| High Voltage Arc Tracking Rate (HVTR) | | | UL 746A |
| 3.00 mm | PLC 0 | | |
| Hot-wire Ignition (HWI) | | | UL 746A |
| 0.400 mm | 95 | sec | |
| 0.750 mm | > 120 | sec | |
| 1.50 mm | > 120 | sec | |
| 3.00 mm | > 120 | sec | |
| Hot-wire Ignition (HWI) | | | UL 746A |
| 0.40 mm | PLC 1 | | |
| 0.75 mm | PLC 0 | | |
| 1.5 mm | PLC 0 | | |
| 3.0 mm | PLC 0 | | |

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| Flammability | Typical Value | Unit | Test method |
|--|---------------|------|-------------------------------|
| Flame Rating ² (0.40 mm, ALL) | V-0 | | UL 94 |
| Glow Wire Ignition Temperature | | | IEC 60695-2-13 |
| 0.40 mm | 775 | °C | |
| 0.75 mm | 800 | °C | |
| 1.5 mm | 825 | °C | |
| 3.0 mm | 850 | °C | |
| Oxygen Index | 37 | % | ISO 4589-2 |
| Toxic Gas Emissions | | | BSS 7239/ATS 1000/ABD 0031 |
| CO | 100 | ppm | |
| HCL | < 1 | ppm | |
| HCN | 15 | ppm | |
| HF | < 1 | ppm | |
| NO + NO ₂ | < 1 | ppm | |
| SO ₂ | < 1 | ppm | |
| Vertical Burn - 60 second ³ (8.89 cm) | 5.0 | sec | DMS 1510 |

| Injection | Typical Value | Unit |
|------------------------|---------------|------|
| Drying Temperature | 100 | °C |
| Drying Time | 1.0 to 3.0 | hr |
| Rear Temperature | 250 to 260 | °C |
| Front Temperature | 260 to 290 | °C |
| Processing (Melt) Temp | 280 | °C |
| Mold Temperature | 120 to 140 | °C |

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Injection Notes

Hot Runners: 250°C to 260°C (482°F to 500°F)

Injection Pressure: rapid

Storage

- Ixef® compounds are shipped in moisture-resistant packages at moisture levels according to specifications. Sealed, undamaged bags should be preferably stored in a dry room at a maximum temperature of 50°C (122°F) and should be protected from possible damage. If only a portion of a package is used, the remaining material should be transferred into a sealable container. It is recommended that Ixef® resins be dried prior to molding following the recommendations found in this datasheet and/or in the Ixef® processing guide.

Drying

- This resin should be dried to a target moisture content of less than 0.10%. When using a desiccant air dryer with dew point of -28°C (-18°F) or lower, these guidelines can be followed: 1-2 hours at 120°C (248°F), 2-4 hours at 100°C (212°F), or 2-8 hours at 80°C (176°F).

Injection Molding

- Ixef® 1524 compound can be readily injection molded in most screw injection molding machines. A general purpose screw is recommended, with minimum back pressure.
- The measured melt temperature should be about 270°C (518°F), and the barrel temperatures should be around 250°C to 260°C (482°F to 500°F) in the rear zone, gradually increasing to 260°C to 275°C (500°F to 527°F) in the front zone. If hot runners are used, they should be set to 250°C to 260°C (482°F to 500°F).
- To maximize crystallinity, the temperature of the mold cavity surface must be held between 120°C and 140°C (248°F and 284°F). Molding at lower temperatures will produce articles that may warp, have poor surface appearance, and have a greater tendency to creep. Set injection pressure to give rapid injection. Adjust holding pressure and hold time to maximize part weight. Transfer from injection to hold pressure at the screw position just before the part is completely filled (95%-99%).

Notes

Typical properties: these are not to be construed as specifications.

¹ Method B

² These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

³ DMS 1510/14 CFR 25.853 Appendix F Part 1, (a), 1, (i)

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