# FRIANYL® A3 GF20 V0

FRIANYL®

*Designed for Electrical applications requiring self-extinguishing properties combined with good mechanical performances, this grade meets the most stringent safety requirements for insulating materials.*

## Product information

| | | |
|---|---|---|
| Resin Identification | (PA66+PA6)-GF20 FR(40) | ISO 1043 |
| Part Marking Code | >(PA66+PA6)-GF20 FR(40)< | ISO 11469 |
| Continuous Service Temperature | 266 °F | IEC 60216-1 |

## Rheological properties

| | | |
|---|---|---|
| Molding shrinkage range, parallel | 0.3 - 0.7 % | ISO 294-4, 2577 |
| Molding shrinkage range, normal | 0.7 - 1.1 % | ISO 294-4, 2577 |

## Typical mechanical properties

| | dry/cond. | | |
|---|---|---|---|
| Tensile modulus | 1.12E6 / - | psi | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 18600 / - | psi | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 3.5 / - | % | ISO 527-1/-2 |
| Charpy impact strength, 23 °C | 23.8 / - | ftlb/in² | ISO 179/1eU |
| Charpy impact strength, -30 °C | 21.4 / - | ftlb/in² | ISO 179/1eU |
| Charpy notched impact strength, 23 °C | 4.04 / - | ftlb/in² | ISO 179/1eA |
| Charpy notched impact strength, -30 °C | 3.09 / - | ftlb/in² | ISO 179/1eA |
| Ball indentation hardness, H 961/30 | 30500 / - | psi | ISO 2039-1 |

## Thermal properties

| | dry/cond. | | |
|---|---|---|---|
| Melting temperature, 10 °C/min | 500 / * | °F | ISO 11357-1/-3 |
| Temperature of deflection under load, 1.8 MPa | 410 / * | °F | ISO 75-1/-2 |
| RTI, electrical, 0.75mm | 266 | °F | UL 746B |
| RTI, electrical, 1.5mm | 266 | °F | UL 746B |
| RTI, electrical, 3.0mm | 266 | °F | UL 746B |
| RTI, impact, 0.75mm | 194 | °F | UL 746B |
| RTI, impact, 1.5mm | 194 | °F | UL 746B |
| RTI, impact, 3.0mm | 194 | °F | UL 746B |
| RTI, strength, 0.75mm | 266 | °F | UL 746B |
| RTI, strength, 1.5mm | 266 / * | °F | UL 746B |
| RTI, strength, 3.0mm | 266 | °F | UL 746B |

## Flammability

| | dry/cond. | | |
|---|---|---|---|
| Burning Behav. at thickness h | V-0 / * | class | IEC 60695-11-10 |
| Thickness tested | 0.0315 / * | in | IEC 60695-11-10 |
| UL recognition | yes / * | | UL 94 |
| Glow Wire Flammability Index, 0.75mm | 1760 / - | °F | IEC 60695-2-12 |
| Glow Wire Flammability Index, 3.0mm | 1760 / - | °F | IEC 60695-2-12 |
| Glow Wire Ignition Temperature, 0.75mm | 1380 / - | °F | IEC 60695-2-13 |
| Glow Wire Ignition Temperature, 1.5mm | 1380 / - | °F | IEC 60695-2-13 |
| Glow Wire Ignition Temperature, 3.0mm | 1470 / - | °F | IEC 60695-2-13 |
| FMVSS Class | SE | | ISO 3795 (FMVSS 302) |

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## Electrical properties

| | dry/cond. | | |
|---|---|---|---|
| Volume resistivity | 1E15 / - | Ohm.m | IEC 62631-3-1 |
| Surface resistivity | * / 1E13 | Ohm | IEC 62631-3-2 |
| Electric strength | 1090 / - | kV/in | IEC 60243-1 |
| Comparative tracking index | 600 / - | | IEC 60112 |

## Physical/Other properties

| | dry/cond. | | |
|---|---|---|---|
| Humidity absorption, 2mm | 1.5 / * | % | Sim. to ISO 62 |
| Water absorption, 2mm | 5.3 / * | % | Sim. to ISO 62 |
| Density | 0.0477 / - | lb/in³ | ISO 1183 |

## Injection

| | | |
|---|---|---|
| Drying Recommended | yes | |
| Drying Temperature | 176 | °F |
| Drying Time, Dehumidified Dryer | 2 - 4 | h |
| Processing Moisture Content | ≤0.1 | % |
| Melt Temperature Optimum | 545 | °F |
| Min. melt temperature | 518 | °F |
| Max. melt temperature | 572 | °F |
| Max. screw tangential speed | ≤0.2 | m/s |
| Mold Temperature Optimum | 176 | °F |
| Min. mold temperature | 140 | °F |
| Max. mold temperature | 212 | °F |

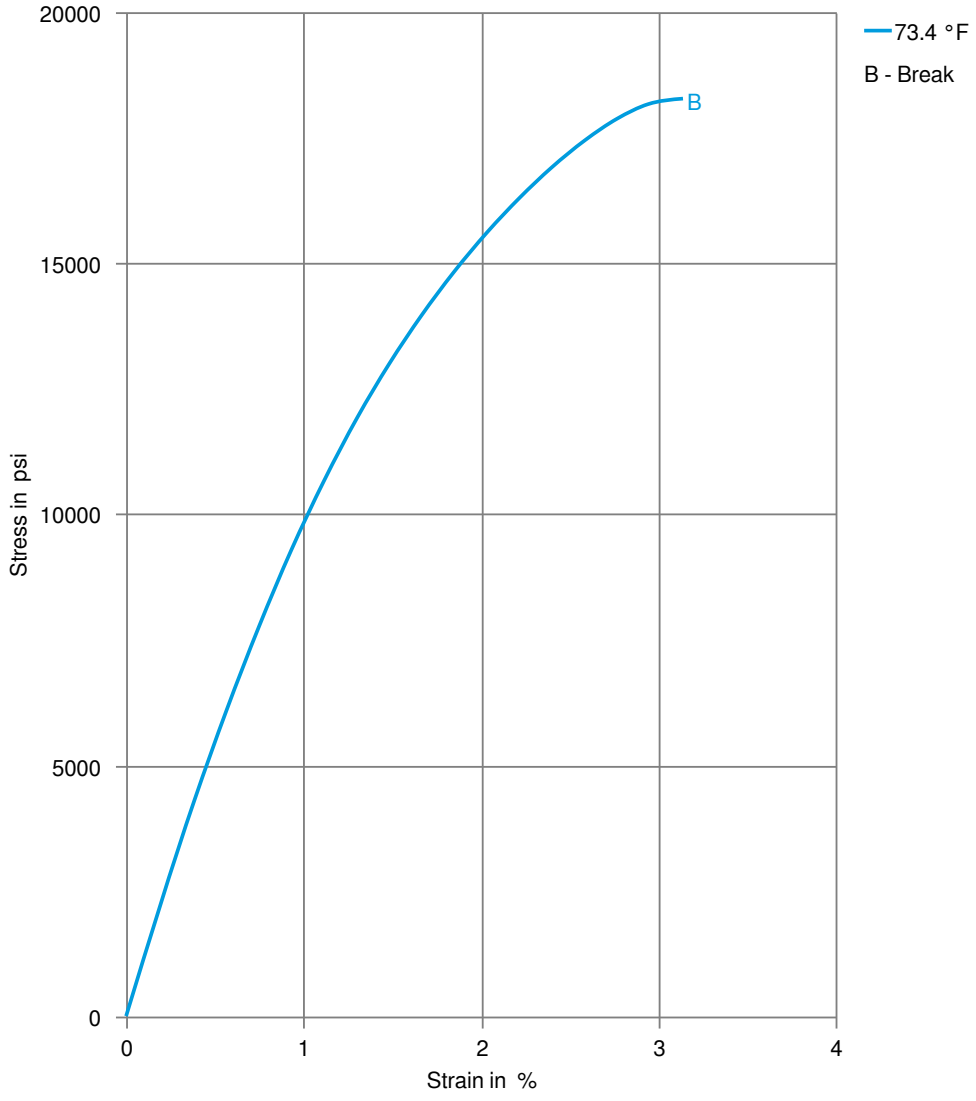
## Characteristics

| | |
|---|---|
| Processing | Injection Molding |
| Additives | Flame retardant, Non-halogenated/Red phosphorus free flame retardant |
| Special characteristics | Flame retardant, Heat stabilized or stable to heat |

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## Stress-strain (dry)



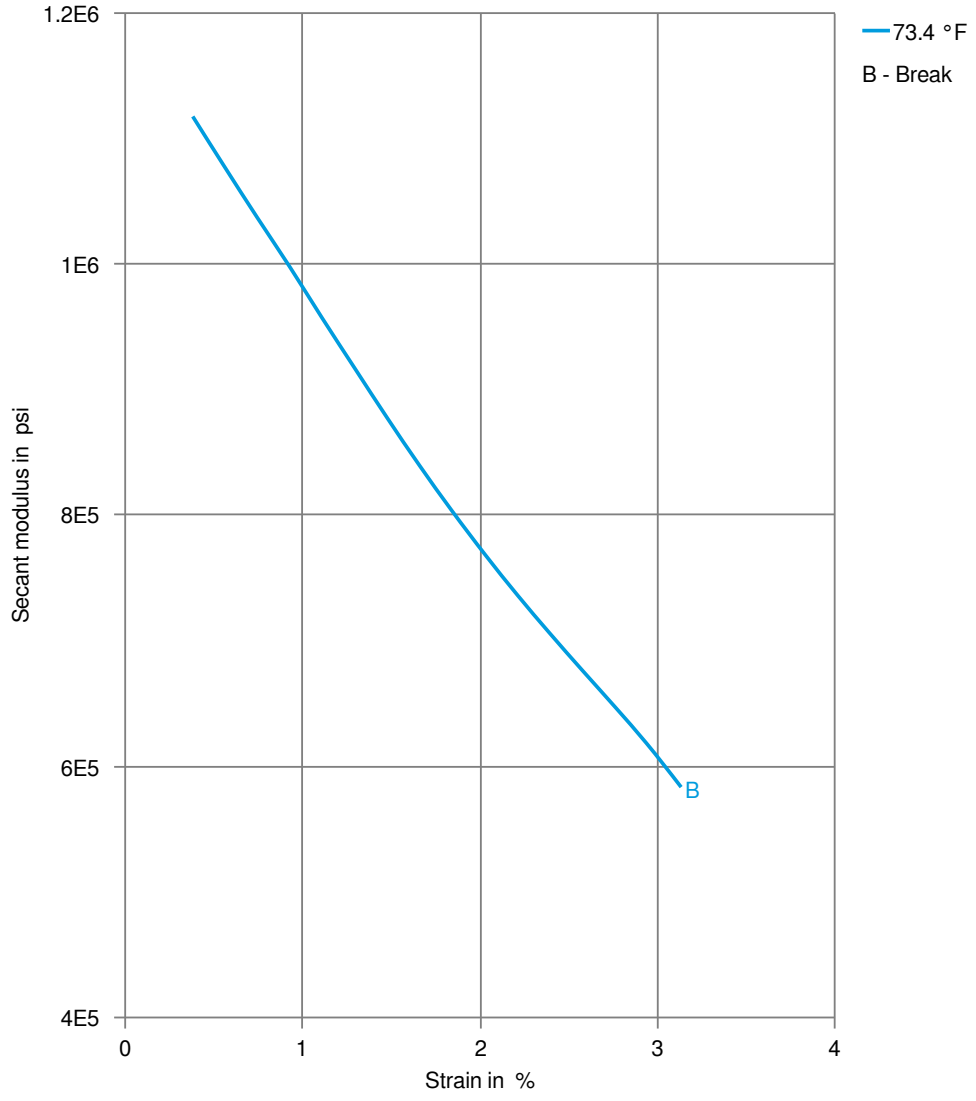



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## Secant modulus-strain (dry)






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