



## Ultramid® 1503-2 NF2004

BASF Corporation - Polyamide 66

Monday, November 4, 2019

### General Information

#### Product Description

Ultramid 1503-2 NF2004 is a 33% glass reinforced, heat stabilized injection molding PA6/6.

#### General

|                        |                                     |
|------------------------|-------------------------------------|
| Material Status        | • Commercial: Active                |
| Availability           | • North America                     |
| Filler / Reinforcement | • Glass Fiber, 33% Filler by Weight |
| Additive               | • Heat Stabilizer                   |
| Features               | • Heat Stabilized                   |
| Agency Ratings         | • EC 1907/2006 (REACH)              |
| RoHS Compliance        | • RoHS Compliant                    |
| Forms                  | • Pellets                           |
| Processing Method      | • Injection Molding                 |

### ASTM & ISO Properties <sup>1</sup>

| Physical                            | Dry     | Conditioned | Unit                  | Test Method |
|-------------------------------------|---------|-------------|-----------------------|-------------|
| Density / Specific Gravity          | 1.40    | --          |                       | ASTM D792   |
| Density                             | 1.40    | --          | g/cm <sup>3</sup>     | ISO 1183    |
| Molding Shrinkage - Flow (0.125 in) | 3.0E-3  | --          | in/in                 |             |
| Water Absorption (Saturation)       | 5.7     | --          | %                     | ASTM D570   |
| Water Absorption                    |         |             |                       | ISO 62      |
| Saturation, 73°F                    | 5.7     | --          | %                     |             |
| Water Absorption                    |         |             |                       | ASTM D570   |
| Equilibrium, 50% RH                 | 1.7     | --          | %                     |             |
| Water Absorption                    |         |             |                       | ISO 62      |
| Equilibrium, 73°F, 50% RH           | 1.7     | --          | %                     |             |
| Mechanical                          | Dry     | Conditioned | Unit                  | Test Method |
| Tensile Modulus (73°F)              | 1.57E+6 | 1.07E+6     | psi                   | ISO 527-2   |
| Tensile Strength (Break, 73°F)      | 28000   | --          | psi                   | ASTM D638   |
| Tensile Stress (Break, 73°F)        | 30500   | 21000       | psi                   | ISO 527-2   |
| Tensile Elongation (Break, 73°F)    | 3.0     | --          | %                     | ASTM D638   |
| Tensile Strain (Break, 73°F)        | 3.0     | 5.0         | %                     | ISO 527-2   |
| Flexural Modulus (73°F)             | 1.20E+6 | --          | psi                   | ASTM D790   |
| Flexural Modulus (73°F)             | 1.44E+6 | 914000      | psi                   | ISO 178     |
| Flexural Strength (73°F)            | 40000   | --          | psi                   | ASTM D790   |
| Impact                              | Dry     | Conditioned | Unit                  | Test Method |
| Charpy Notched Impact Strength      |         |             |                       | ISO 179     |
| -22°F                               | 5.2     | 5.2         | ft·lb/in <sup>2</sup> |             |
| 73°F                                | 5.7     | 7.1         | ft·lb/in <sup>2</sup> |             |
| Charpy Unnotched Impact Strength    |         |             |                       | ISO 179     |
| -22°F                               | 36      | 36          | ft·lb/in <sup>2</sup> |             |
| 73°F                                | 43      | 48          | ft·lb/in <sup>2</sup> |             |
| Notched Izod Impact (73°F)          | 2.2     | --          | ft·lb/in              | ASTM D256   |

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| Impact                                                   | Dry | Conditioned | Unit                  | Test Method |
|----------------------------------------------------------|-----|-------------|-----------------------|-------------|
| Notched Izod Impact Strength<br>73°F                     | 5.2 | 7.1         | ft·lb/in <sup>2</sup> | ISO 180     |
| Thermal                                                  | Dry | Conditioned | Unit                  | Test Method |
| Deflection Temperature Under Load<br>66 psi, Unannealed  | 567 | --          | °F                    | ASTM D648   |
| Heat Deflection Temperature<br>66 psi, Unannealed        | 507 | --          | °F                    | ISO 75-2/B  |
| Deflection Temperature Under Load<br>264 psi, Unannealed | 486 | --          | °F                    | ASTM D648   |
| Heat Deflection Temperature<br>264 psi, Unannealed       | 491 | --          | °F                    | ISO 75-2/A  |
| Peak Melting Temperature                                 | 500 | --          | °F                    | ASTM D3418  |
| Melting Temperature (DSC)                                | 500 | --          | °F                    | ISO 3146    |

## **Processing Information**

| Injection               | Dry                | Unit |
|-------------------------|--------------------|------|
| Drying Temperature      | 140                | °F   |
| Drying Time             | 1.0 to 2.0         | hr   |
| Suggested Max Moisture  | 0.040 to 0.20      | %    |
| Processing (Melt) Temp  | 550 to 581         | °F   |
| Mold Temperature        | 140 to 212         | °F   |
| Injection Pressure      | 508 to 1810        | psi  |
| Injection Rate          | Fast               |      |
| Back Pressure           | 0.00 to 50.8       | psi  |
| Screw Speed             | 40 to 80           | rpm  |
| Screw Compression Ratio | 3.0:1.0 to 4.0:1.0 |      |

## **Notes**

<sup>1</sup> Typical properties: these are not to be construed as specifications.