

## Technical Data Sheet

### Icorene XE00020 NAT



Polyamide 6

#### Product Description

Icorene XE00020 is an experimental toughened polyamide 6 based natural powder (PA6) containing AO&UV stabilizer additives specifically designed for rotomoulding. This PA6 toughened grade is used for making rotomoulded parts typically used in high heat applications or for long term hot water contact. It features good melt fluidity for moulding around metal inserts. The parts made using this material require post moulding conditioning in hot moist air or in water to achieve full impact resistance and ductility. This powder may be rotational moulded without using an inert gas (N2 or CO2) atmosphere. FULL DATA TESTING WITH ROTOMOULDING NOT COMPLETED DEFAULT INJECTION FIGURES ARE USED CURRENTLY

|                   |                           |
|-------------------|---------------------------|
| Processing Method | Rotomolding               |
| Attribute         | UV Stabilized             |
| Forms             | Powder                    |
| Additive          | Antioxidant               |
| Application       | Automotive Under the Hood |

| Typical Properties                                      | Nominal Value | Units             | Test Method |
|---------------------------------------------------------|---------------|-------------------|-------------|
| <b>Physical</b>                                         |               |                   |             |
| Density, (Natural)                                      | 1.14          | g/cm <sup>3</sup> | ASTM D1505  |
| <b>Mechanical</b>                                       |               |                   |             |
| Tensile Stress at Yield                                 |               |                   |             |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Rotational Molded) | 57.0          | MPa               | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Rotational Molded) | 70.0          | MPa               | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Injection Molded)  | 70.0          | MPa               | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Injection Molded)  | 57.0          | MPa               | ISO 527-2   |
| Tensile Strain at Break                                 |               |                   |             |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Rotational Molded) | 20            | %                 | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Rotational Molded) | 6.3           | %                 | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Injection Molded)  | 20            | %                 | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Injection Molded)  | 6.3           | %                 | ISO 527-2   |
| Tensile Strain at Yield                                 |               |                   |             |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Rotational Molded) | 4.1           | %                 | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Rotational Molded) | 13            | %                 | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Injection Molded)  | 13            | %                 | ISO 527-2   |
| (Type 1A, 3.20 mm, 23 °C, 50 mm/min, Injection Molded)  | 4.1           | %                 | ISO 527-2   |

|                                                                      |      |                   |           |
|----------------------------------------------------------------------|------|-------------------|-----------|
| <b>Tensile Modulus</b>                                               |      |                   |           |
| (3.20 mm, 23 °C, 50 mm/min, Rotational Molded, Type 1A)              | 1870 | MPa               | ISO 527-1 |
| (3.20 mm, 23 °C, 50 mm/min, Rotational Molded, Type 1A)              | 2330 | MPa               | ISO 527-1 |
| (3.20 mm, 23 °C, 50 mm/min, Injection Molded, Type 1A)               | 1870 | MPa               | ISO 527-1 |
| (3.20 mm, 23 °C, 50 mm/min, Injection Molded, Type 1A)               | 2330 | MPa               | ISO 527-1 |
| <b>Impact</b>                                                        |      |                   |           |
| Charpy Impact Strength - Notched                                     |      |                   |           |
| (23 °C, Edgewise, Injection Molded, Complete Break)                  | 18   | kJ/m <sup>2</sup> | ISO 179   |
| (23 °C, Type 1, Edgewise, Notch A, Injection Molded, Complete Break) | 8.7  | kJ/m <sup>2</sup> | ISO 179   |
| <b>Flammable</b>                                                     |      |                   |           |
| Burning Rate                                                         |      |                   |           |
| (2.00 mm)                                                            | 0.0  | mm/min            | ISO 3795  |
| (2.00 mm)                                                            | 0.0  | mm/min            | FMVSS 302 |
| <b>Additional Information</b>                                        |      |                   |           |
| Water Absorption 23C/50RH                                            | 3    | %                 | ISO 62    |
| <b>UL Information</b>                                                |      |                   |           |
| Flame Rating, (1.5 mm) (UL 94)                                       | V-2  |                   |           |