

## EMERGE™ PC/ABS 7700 NA Advanced Resin

### Overview

EMERGE™ PC/ABS 7700 NA Advanced Resin is an ignition-resistant PC/ABS blend that contains no chlorine or bromine additives. It has superior processability for injection molding applications. This grade has excellent aesthetics, is UV stabilized and is available in custom colors.

Main Characteristics:

- RoHS Compliant

Applications:

- Electrical housings
- Consumer Electronics
- Information technology equipment

| Physical                                    | Nominal Value (English) | Nominal Value (SI)     | Test Method            |
|---|-------------------------|------------------------|------------------------|
| Density                                     |                         |                        |                        |
| --  | 1.17 g/cm <sup>3</sup>  | 1.17 g/cm <sup>3</sup> | ASTM D792              |
| --  | 1.18 g/cm <sup>3</sup>  | 1.18 g/cm <sup>3</sup> | ISO 1183/B             |
| Melt Mass-Flow Rate (MFR)                   |                         |                        |                        |
| 230°C/3.8 kg                                | 11 g/10 min             | 11 g/10 min            | ASTM D1238             |
| 240°C/5.0 kg                                | 20 g/10 min             | 20 g/10 min            | ASTM D1238             |
| 260°C/2.16 kg                               | 13 g/10 min             | 13 g/10 min            | ISO 1133               |
| Molding Shrinkage - Flow                    | 4.0E-3 to 6.0E-3 in/in  | 0.40 to 0.60 %         | ASTM D955<br>ISO 294-4 |
| Mechanical                                  | Nominal Value (English) | Nominal Value (SI)     | Test Method            |
| Tensile Modulus                             |                         |                        |                        |
| 0.126 in (3.20 mm), Injection Molded        | 380000 psi              | 2620 MPa               | ASTM D638              |
| 0.157 in (4.00 mm), Injection Molded        | 371000 psi              | 2560 MPa               | ISO 527-2/1            |
| Tensile Strength                            |                         |                        |                        |
| Yield, 0.126 in (3.20 mm), Injection Molded | 8700 psi                | 60.0 MPa               | ASTM D638              |
| Yield, 0.157 in (4.00 mm), Injection Molded | 7980 psi                | 55.0 MPa               | ISO 527-2/50           |
| Break, 0.126 in (3.20 mm), Injection Molded | 7000 psi                | 48.3 MPa               | ASTM D638              |
| Break, 0.157 in (4.00 mm), Injection Molded | 6530 psi                | 45.0 MPa               | ISO 527-2/50           |
| Tensile Elongation                          |                         |                        |                        |
| Yield, 0.126 in (3.20 mm), Injection Molded | 3.8 %                   | 3.8 %                  | ASTM D638              |
| Yield, 0.157 in (4.00 mm), Injection Molded | 3.8 %                   | 3.8 %                  | ISO 527-2/50           |
| Break, 0.126 in (3.20 mm), Injection Molded | 65 %                    | 65 %                   | ASTM D638              |
| Break, 0.157 in (4.00 mm), Injection Molded | 43 %                    | 43 %                   | ISO 527-2/50           |
| Flexural Modulus                            |                         |                        | ASTM D790              |
| 0.126 in (3.20 mm), Injection Molded        | 390000 psi              | 2690 MPa               |                        |
| Flexural Strength                           |                         |                        | ASTM D790              |
| 0.126 in (3.20 mm), Injection Molded        | 14000 psi               | 96.5 MPa               |                        |

| <b>Impact</b>                                     | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
|---|--------------------------------|---------------------------|-------------------------|
| Charpy Notched Impact Strength                    |                                |                           | ISO 179/1eA             |
| -22°F (-30°C), Injection Molded                   | 7.1 ft·lb/in <sup>2</sup>      | 15 kJ/m <sup>2</sup>      |                         |
| 73°F (23°C), Injection Molded                     | 19 ft·lb/in <sup>2</sup>       | 40 kJ/m <sup>2</sup>      |                         |
| Notched Izod Impact                               |                                |                           |                         |
| 0°F (-18°C), 0.126 in (3.20 mm), Injection Molded | 3.7 ft·lb/in                   | 200 J/m                   | ASTM D256               |
| 20°F (-7°C)                                       | 8.2 ft·lb/in                   | 440 J/m                   | ASTM D256               |
| 73°F (23°C), 0.126 in (3.20 mm), Injection Molded | 9.0 ft·lb/in                   | 480 J/m                   | ASTM D256               |
| -22°F (-30°C), Injection Molded                   | 6.7 ft·lb/in <sup>2</sup>      | 14 kJ/m <sup>2</sup>      | ISO 180/A               |
| 73°F (23°C), Injection Molded                     | 24 ft·lb/in <sup>2</sup>       | 50 kJ/m <sup>2</sup>      | ISO 180/A               |
| <b>Hardness</b>                                   | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Rockwell Hardness                                 |                                |                           | ASTM D785               |
| R-Scale, 0.126 in (3.20 mm), Injection Molded     | 120                            | 120                       |                         |
| <b>Thermal</b>                                    | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Deflection Temperature Under Load                 |                                |                           |                         |
| 66 psi (0.45 MPa), Unannealed                     | 195 °F                         | 90.6 °C                   | ASTM D648               |
| 66 psi (0.45 MPa), Unannealed                     | 190 °F                         | 88.0 °C                   | ISO 75-2/B              |
| 264 psi (1.8 MPa), Unannealed                     | 175 °F                         | 79.4 °C                   | ASTM D648               |
| 264 psi (1.8 MPa), Unannealed                     | 171 °F                         | 77.0 °C                   | ISO 75-2/A              |
| Vicat Softening Temperature                       |                                |                           |                         |
| --  | 220 °F                         | 104 °C                    | ASTM D1525 <sup>1</sup> |
| --  | 219 °F                         | 104 °C                    | ISO 306/A120            |
| --  | 201 °F                         | 94.0 °C                   | ISO 306/B50             |
| CLTE  |                                |                           | ASTM D696               |
| Flow : -40 to 104°F (-40 to 40°C)                 | 3.8E-5 in/in/°F                | 6.8E-5 cm/cm/°C           |                         |
| Transverse : -40 to 104°F (-40 to 40°C)           | 3.8E-5 in/in/°F                | 6.8E-5 cm/cm/°C           |                         |
| <b>Electrical</b>                                 | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Surface Resistivity                               | 5.2E+15 ohms                   | 5.2E+15 ohms              | IEC 60093               |
| Volume Resistivity                                | 1.0E+18 ohms·cm                | 1.0E+18 ohms·cm           | IEC 60093               |
| Electric Strength                                 |                                |                           | IEC 60243-1             |
| 0.0630 in (1.60 mm), in Oil                       | 660 V/mil                      | 26 kV/mm                  |                         |
| 0.126 in (3.20 mm), in Oil                        | 460 V/mil                      | 18 kV/mm                  |                         |
| Relative Permittivity                             |                                |                           | IEC 60250               |
| 100 Hz  | 2.86                           | 2.86                      |                         |
| 1 MHz   | 2.80                           | 2.80                      |                         |
| Dissipation Factor                                |                                |                           | IEC 60250               |
| 100 Hz  | 4.0E-3                         | 4.0E-3                    |                         |
| 1 MHz   | 7.0E-3                         | 7.0E-3                    |                         |
| <b>Flammability</b>                               | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Flame Rating <sup>2</sup>                         |                                |                           | UL 94                   |
| 0.06 in (1.5 mm)                                  | V-0                            | V-0                       |                         |
| 0.08 in (2.0 mm)                                  | 5VB                            | 5VB                       |                         |
| 0.10 in (2.5 mm)                                  | 5VA                            | 5VA                       |                         |
| Glow Wire Flammability Index <sup>2</sup>         |                                |                           | IEC 60695-2-12          |
| 0.06 in (1.5 mm)                                  | 1700 °F                        | 925 °C                    |                         |
| 0.08 in (2.0 mm)                                  | 1700 °F                        | 925 °C                    |                         |
| 0.10 in (2.5 mm)                                  | 1700 °F                        | 925 °C                    |                         |
| 0.12 in (3.0 mm)                                  | 1740 °F                        | 950 °C                    |                         |
| Oxygen Index <sup>2</sup>                         | 28 %                           | 28 %                      | ASTM D2863              |

| <b>Injection</b>       | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> |
|------------------------|--------------------------------|---------------------------|
| Drying Temperature     | 180 to 190 °F                  | 82 to 88 °C               |
| Drying Time            | 3.0 to 4.0 hr                  | 3.0 to 4.0 hr             |
| Processing (Melt) Temp | 460 to 525 °F                  | 238 to 274 °C             |
| Mold Temperature       | 140 to 195 °F                  | 60 to 91 °C               |