# NYCOA Polyamide 4112 FR

### Polyamide 6

Nycoa (Nylon Corporation of America)

#### Message:

NYCOA 4112 FR is a high viscosity resin particularly suitable for extrusion processing, thermoforming and blow molding. Its melt viscosity and strength provide ease of processing for tubing, profile, and blow molded articles.

This material is specifically engineered for applications requiring high stiffness, toughness, dimensional stability, and a greater service life than standard grades of glass reinforced Nylon 6.

NYCOA 4112 FR is available in UV stable, custom colors, and impact modified grades. It also has excellent chemical resistance to greases, oils, and other hydrocarbons.

Suggested applications include thermoformed under the hood automotive components and blow molded chemical storage reservoirs.

| General Information    |   |       |             |  |  |
|------------------------|---|-------|-------------|--|--|
| Filler / Reinforcement | Glass fiber reinforced material, 12% filler by weight |       |             |  |  |
| Features               | Good dimensional stability                            |       |             |  |  |
|                        | Rigidity, high  |       |             |  |  |
|                        | Good melt strength                                    |       |             |  |  |
|                        | Good chemical resistance                              |       |             |  |  |
|                        | Hydrocarbon resistance                                |       |             |  |  |
|                        | Oil resistance  |       |             |  |  |
|                        | Grease resistance                                     |       |             |  |  |
|                        | Good toughness  |       |             |  |  |
|                        | Viscosity, High                                       |       |             |  |  |
|                        | Flame retardancy                                      |       |             |  |  |
| Uses                   | Blow molding applications                             |       |             |  |  |
|                        | Pipe fittings   |       |             |  |  |
|                        | Parts under the hood of a co                          | ar    |             |  |  |
|                        | Container   |       |             |  |  |
|                        | Profile   |       |             |  |  |
| Appearance             | Translucent   |       |             |  |  |
|                        | Available colors                                      |       |             |  |  |
|                        | Available colors                                      |       |             |  |  |
| Forms                  | Particle  |       |             |  |  |
| Processing Method      | Blow molding  |       |             |  |  |
|                        | Extrusion   |       |             |  |  |
|                        | Thermoforming   |       |             |  |  |
| Physical               | Nominal Value   | Unit  | Test Method |  |  |
| Specific Gravity       | 1.32  | g/cm³ | ASTM D792   |  |  |
| Molding Shrinkage      |   |       | ASTM D955   |  |  |

| Flow                                     | 0.40                                | %    | ASTM D955   |
|--|-------------------------------------|------|-------------|
| Transverse flow                          | 0.60                                | %    | ASTM D955   |
| Water Absorption (24 hr)                 | 1.0                                 | %    | ASTM D570   |
| Hardness                                 | Nominal Value                       | Unit | Test Method |
| Rockwell Hardness (R-Scale)              | 120                                 |      | ASTM D785   |
| Mechanical                               | Nominal Value                       | Unit | Test Method |
| Tensile Strength <sup>1</sup>            | 75.2                                | MPa  | ASTM D638   |
| Tensile Elongation <sup>2</sup> (Break)  | 15                                  | %    | ASTM D638   |
| Flexural Modulus <sup>3</sup>            | 3030                                | MPa  | ASTM D790   |
| Flexural Strength <sup>4</sup>           | 86.2                                | MPa  | ASTM D790   |
| Impact                                   | Nominal Value                       | Unit | Test Method |
| Notched Izod Impact (6.35 mm)            | 130                                 | J/m  | ASTM D256   |
| Thermal                                  | Nominal Value                       | Unit | Test Method |
| Deflection Temperature Under Load        |                                     |      | ASTM D648   |
| 0.45 MPa, not annealed                   | 218                                 | °C   | ASTM D648   |
| 1.8 MPa, not annealed                    | 204                                 | °C   | ASTM D648   |
| Melting Temperature                      | 220                                 | °C   | DSC         |
| Additional Information                   |                                     |      |             |
| The value listed as Melting Point DSC, w | as tested in accordance with ASTM D | 789. |             |
|  |                                     |      |             |
| NOTE                                     |                                     |      |             |
| NOTE 1.                                  | 50 mm/min                           |      |             |
|  | 50 mm/min<br>50 mm/min              |      |             |
| 1.                                       |                                     |      |             |

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