

# ASTALAC™ ASA 304

Acrylonitrile Styrene Acrylate

Marplex Australia Pty. Ltd.

## Message:

ASTALAC™ ASA 304 is a medium melt flow ultra high impact grade of ASA which is designed for applications requiring a combination of toughness, mouldability, rigidity and heat resistance. As ASA grades show superior colour and property retention compared to ABS, typical applications include signage, outside building products and automotive exterior components.

Note: The letters "UV" or "W" indicate additional UV stabilisation [ ie: ASTALAC™ ASA 304UV ].

| General Information                              |                              |                   |             |
|--------------------------------------------------|------------------------------|-------------------|-------------|
| Features                                         | Good Color Stability         |                   |             |
|                                                  | Good Moldability             |                   |             |
|                                                  | Good Toughness               |                   |             |
|                                                  | Medium Flow                  |                   |             |
|                                                  | Medium Heat Resistance       |                   |             |
|                                                  | Medium Rigidity              |                   |             |
|                                                  | Ultra High Impact Resistance |                   |             |
| Uses                                             | Automotive Applications      |                   |             |
|                                                  | Automotive Exterior Parts    |                   |             |
| Physical                                         | Nominal Value                | Unit              | Test Method |
| Specific Gravity                                 | 1.06                         | g/cm <sup>3</sup> | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (220°C/10.0 kg)        | 12                           | g/10 min          | ASTM D1238  |
| Molding Shrinkage - Flow (3.00 mm)               | 0.60                         | %                 | ASTM D955   |
| Water Absorption (24 hr)                         | 0.25                         | %                 | ASTM D570   |
| Hardness                                         | Nominal Value                | Unit              | Test Method |
| Rockwell Hardness (R-Scale)                      | 97                           |                   | ASTM D785   |
| Mechanical                                       | Nominal Value                | Unit              | Test Method |
| Tensile Strength <sup>1</sup> (3.20 mm)          | 40.0                         | MPa               | ASTM D638   |
| Tensile Elongation <sup>2</sup> (Break, 3.20 mm) | 70                           | %                 | ASTM D638   |
| Flexural Modulus <sup>3</sup> (3.20 mm)          | 2200                         | MPa               | ASTM D790   |
| Flexural Strength <sup>4</sup> (3.20 mm)         | 68.0                         | MPa               | ASTM D790   |
| Impact                                           | Nominal Value                | Unit              | Test Method |
| Notched Izod Impact (3.20 mm)                    | 450                          | J/m               | ASTM D256   |
| Gardner Impact (3.20 mm)                         | 35.0                         | J                 | ASTM D3029  |
| Thermal                                          | Nominal Value                | Unit              | Test Method |
| Deflection Temperature Under Load                |                              |                   | ASTM D648   |
| 1.8 MPa, Unannealed, 3.20 mm                     | 77.0                         | °C                |             |
| 1.8 MPa, Unannealed, 6.40 mm                     | 82.0                         | °C                |             |

| 1.8 MPa, Unannealed, 12.7 mm             | 87.0             | °C                 |                         |
|------------------------------------------|------------------|--------------------|-------------------------|
| Vicat Softening Temperature              | 103              | °C                 | ASTM D1525 <sup>5</sup> |
| CLTE - Flow                              | 9.0E-5           | cm/cm/°C           | ASTM D696               |
| Flammability                             | Nominal Value    | Unit               | Test Method             |
| Flame Rating (1.60 mm)                   | HB               |                    | UL 94                   |
| Glow Wire Ignition Temperature (1.60 mm) | 550              | °C                 | AS/NZS 60695.2.12       |
| Injection                                | Nominal Value    | Unit               |                         |
| Drying Temperature                       | 85.0 to 90.0     | °C                 |                         |
| Drying Time                              | 3.0 to 5.0       | hr                 |                         |
| Rear Temperature                         | 205 to 225       | °C                 |                         |
| Middle Temperature                       | 215 to 235       | °C                 |                         |
| Front Temperature                        | 225 to 245       | °C                 |                         |
| Processing (Melt) Temp                   | 220 to 250       | °C                 |                         |
| Mold Temperature                         | 40.0 to 70.0     | °C                 |                         |
| Injection Pressure                       | 60.0 to 140      | MPa                |                         |
| Injection Rate                           | Moderate         |                    |                         |
| Back Pressure                            | 0.100 to 0.500   | MPa                |                         |
| Screw Speed                              | 40 to 60         | rpm                |                         |
| Clamp Tonnage                            | 3.0 to 6.0       | kN/cm <sup>2</sup> |                         |
| NOTE                                     |                  |                    |                         |
| 1.                                       | 5.0 mm/min       |                    |                         |
| 2.                                       | 5.0 mm/min       |                    |                         |
| 3.                                       | 1.3 mm/min       |                    |                         |
| 4.                                       | 1.3 mm/min       |                    |                         |
| 5.                                       | Loading 1 (10 N) |                    |                         |

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