



Technical Data Sheet

Product Name
SCGC™ LLDPE

Product Type
Polyethylene for Rotational Moulding

Product Grade
M735RU

Product Description

SCGC M735RU is a linear-low density polyethylene (LLDPE) for rotational moulding applications. M735RU is a natural color PE resin available in a pellet and powder form. With a high melt flow and a balance of impact strength, stiffness, and processability, this grade is suitable for rotational moulding of decorative items and small industrial parts.

Typical Application

- Decorative items
- LED lamp covers
- Small industrial parts
- Intricate automotive articles

Product Characteristics

- High melt flow suitable for complex shape
- Superior gloss and surface finish
- Smooth inside surface
- Good rigidity and toughness
- Antioxidant and UV stabilized (UV4)

International Compliance

- Meet the requirements of U.S. Food and Drug Administration (FDA) 21 CFR Part 177.1520 Olefin polymers (c) 2.1 for food contact under conditions of use D-G (21 CFR 176.170(c) Table 2), for all food types
- UL 94 HB (flame retardancy)

Physical Properties

| Properties | Test Method | Typical Value | Unit |
|---|-------------|---------------|-------------------|
| Melt Flow Rate @ 190°C, 2.16 kg | ASTM D 1238 | 6.0 | g/10 min |
| Density | ASTM D 1505 | 0.932 | g/cm ³ |
| Melting Point | ASTM D 2117 | 125 (257) | °C (°F) |
| Crystallization Point | ASTM D 2117 | 113 (235) | °C (°F) |
| Heat Deflection Temperature @ 0.455 MPa | ASTM D 648 | 58 (136) | °C (°F) |
| Vicat Softening Temperature | ASTM D 1525 | 108 (226) | °C (°F) |
| Mechanical Properties | | | |
| Tensile Strength at Yield @ Speed 50 mm/min | ASTM D 638 | 17 (2500) | MPa (psi) |
| Tensile Strength at Break @ Speed 50 mm/min | ASTM D 638 | 21 (3100) | MPa (psi) |
| Elongation at Break @ Speed 50 mm/min | ASTM D 638 | 1000 | % |
| Flexural Modulus | ASTM D 790 | 570 (82700) | MPa (psi) |
| Surface Hardness | ASTM D 2240 | 57 | Shore D |
| ARM Impact Strength @ -40°C (5.5 mm rotomolded sample) ARM Method | | 25 (101) | J/mm (lb-ft) |
| Brittleness Temperature | ASTM D 746 | < -60 (-76) | °C (°F) |

Note: • The given values are typical value measured on the product. Values herein are not to be constructed as a product specification.

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Processing Guidelines

Moulding cycles depend on mould materials and its wall thickness, oven temperature, and shot size. Typical oven temperatures should be set between 250 and 300°C. The recommended PIAT for M735RU/RUP is about 200°C.

Points of Concerns

- It is not recommended to flame the surfaces of molded parts with an open torch due to risk of thermal degradation and premature failure.
- Inclusion of fillers or recycled materials into the resins either by compounding or dry blending is not recommended due to risk of compromised impact strength.
- Use of pigments above 0.3% by dry blending into natural powder should be avoided due to risks of lower impact strength.
- Additional antioxidants, internal lubricants, or UV stabilizers into the virgin resins during the compounding process should be considered depending on the end applications.
- M735RU/RUP is not recommended for extrusion into color compound. If used, must add additional antioxidants during extrusion process.
- M735RU/RUP is not recommended for products used under direct and intense sunlight.
- The discoloration to the products may be occurred, irrespective of period of time, due to external factors such as gas fading, staining, sublimation, migration, contamination with packaging or chemicals in contact, either directly or indirectly.
- Customer shall be responsible for testing, verification, and approval of final products for fit-for-use in terms of the customer's own use and end user's use both functions and appearance before make warranties of merchantability.

Product Technical Assistance

For technical assistance or further information on this product or any other SCG Chemicals' products, contact your SCG Chemicals technical services at the address as specified below.

Product Available Form

- Natural pellet
- Natural powder

Product Packaging

- 25 kg loose bag
- 25 kg stretch wrap palletized
- 750 kg big bag

Storage

- Store in original container in tidy according to the manual of Handling and Storage from Thai Polyethylene Co., Ltd.
- Product(s) should be stored in dry and dust free location at temperature below 50 °C and protected from direct sunlight and/or heat, well-ventilated area, away from incompatible materials and food and drink, as this may lead to quality deterioration, which results in odour generation and colour changes and can have negative effects on the physical properties of this product.
- Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
- The storage area should be stable and not be slopped.

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