



Technical Datasheet

Product Name

SCGC™ LLDPE

Product Type

Polyethylene for Rotational Moulding

Product Grade

M735RW / M70

Product Description

SCGC M735RW is a linear-low density polyethylene (LLDPE) for rotational moulding applications. M735RW is a natural color PE resin available in a pellet and powder form, whereas M70 is the color compound version. With a high melt flow and a balance of impact strength, stiffness, and processability, this grade is suitable for rotational moulding of lawn and garden articles, decorative items, and small industrial parts.

Typical Application

- Lawn and garden articles
- 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
- UV8 for outdoor use
- Good rigidity and toughness

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)
- For compliance of specific colors, please contact our technical service.

Physical Properties

Property	Test Method	Typical Value	Unit
Resin Properties			
Melt Flow Rate	ASTM D 1238 @ 190 °C, 2.16 kg	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	ASTM D 648 @ 0.455 MPa	58 (136)	°C (°F)
Vicat Softening Temperature	ASTM D 1525	108 (226)	°C (°F)
Mechanical Properties			
Tensile Strength-at-Yield	ASTM D 638 @ Speed 50 mm/min	17 (2500)	MPa (psi)
Tensile Strength-at-Break	ASTM D 638 @ Speed 50 mm/min	21 (3100)	MPa (psi)
Elongation-at-Break	ASTM D 638 @ Speed 50 mm/min	1000	%
Flexural Modulus	ASTM D 790	570 (82700)	MPa (psi)
Surface Hardness	ASTM D 2240	57	Shore D
ARM Impact Strength @ -40 °C	ARM Method (5.5 mm rotomoulded sample)	25 (101)	J/mm (lb-ft)
Brittleness Temperature	ASTM D 746	< -60 (-76)	°C (°F)

Note: the given values are typical values 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 M735RW/RWP is about 210 °C. However, the optimum PIAT of M70 color compound may vary with a color shade.

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.
- Not for cooking less than 10 min heating time.
- For black compound, use up the powder as quickly as possible after the package is opened due to a high moisture pick-up that will result to pinholing and poor impact strength.

Product Technical Assistance

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

Product Available Forms

- Natural pellet (M735RW)
- Natural powder (M735RWP)
- Color compound pellet (M70)
- Color compound powder (M70)

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 Company Limited/Thai Polypropylene Company Limited.
- Product(s) should be stored in dry and dust free location at temperature below 50oC 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.

Safety

- The product is not classified as a hazardous material.
- Please see our Safety Data Sheet for details on various aspects of safety, recovery, and disposal of the products; for more information, contact your SCG Chemicals technical services.

Recycling

- The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.
- Please see our Safety Data Sheet for details on various aspects of safety, recovery and disposal of the products; for more information, contact your SCG Chemicals technical services.

Related Documents

- The latest version of this document will be available at our website, www.scgchemicals.com, or can be obtained from the SCG Chemicals technical services.
- The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.
 - Safety Data Sheet.
 - Declaration of Compliance.

Disclaimer

- The Applications specified herein is for reference only.
- It is customer's responsibilities to inspect and test the product for suitability of the customer's own use and purpose. The customer is responsible for appropriate, safe, legal use, processing and handling of the product.
- To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication. We however do not assume any liability whatsoever for the accuracy and completeness of the information contained herein.
- We make no warranties which extend beyond the description herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose.
- No liability can be accepted in respect of the use of the product in conjunction with other materials. The information contained herein relates exclusively to the product when it is not used in conjunction with any third party's materials