



Technical Data Sheet

Product Name
SCGC™ LLDPE

Product Type
Polyethylene for Rotational Moulding

Product Grade
M3204RU

Product Description

SCGC M3204RU is a linear-low density polyethylene (LLDPE) for indoor/ semi-indoor rotational moulding applications. M3204RU and M3204RUP are the natural color PE resin available in a pellet and powder form, respectively. This grade is suitable for containers and general-purpose applications which are indoor/ semi-indoor or for thin wall (less than 5 mm) parts.

Typical Application

- Cooler boxes
- Portable containers
- Material handling containers
- General purpose moulding
- Fish bins
- Small thin tanks
(less than 1000 liters)

Product Characteristics

- High impact strength
- Low shrinkage and warpage
- Consistent dimension
- UV-stabilized (UV2) for indoor/semi-indoor

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.
- Meet Thai Industrial Standard TIS 816-2565 (PE resin).

Physical Properties

Properties	Test Method	Typical Value	Unit
Melt Flow Rate @ 190°C, 2.16 kg	ASTM D 1238	4.0	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	110 (230)	°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	25 (3600)	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	55	Shore D
ARM Impact Strength @ -40°C (5.5 mm rotomolded sample)	ARM Method	28 (114)	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 M3204RU/RUP is about 180°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.
- M3204RU/RUP is not recommended for extrusion into color compound. If used, must add additional antioxidants during extrusion process.
- M3204RU/RUP is not recommended for parts which exceed 5 mm or 30 min heating.
- M3204RU/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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