



Technical Data Sheet

Product Type

Polyethylene for Rotational Moulding

Product Name

SCGC™ LLDPE

Product Grade

M3804RU / M20

Product Description

SCGC M3804RU is a linear-low density polyethylene (LLDPE) for indoor / semi-indoor rotational moulding applications. M3804RU is a natural color PE resin available in a pellet and powder form, whereas M20 is the color compound version. This grade is suitable for rotational moulding of storage tanks and general-purpose applications which are indoor / semi-indoor or for thin wall (less than 5 mm) parts.

Typical Application

- Water storage tanks
- Small to medium tanks
(< 5,000 L¹)
- Material handling equipment

Product Characteristics

- High stiffness
- Good impact strength
- Fast cooking
- 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).

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	0.938	g/cm ³
Melting Point	ASTM D 2117	125 (257)	°C (°F)
Crystallization Point	ASTM D 2117	113 (236)	°C (°F)
Heat Deflection Temperature @ 0.455 MPa	ASTM D 648	65 (149)	°C (°F)
Vicat Softening Temperature	ASTM D 1525	116 (241)	°C (°F)
Mechanical Properties			
Tensile Strength at Yield @ Speed 50 mm/min	ASTM D 638	20 (2900)	MPa (psi)
Tensile Strength at Break @ Speed 50 mm/min	ASTM D 638	18 (2600)	MPa (psi)
Elongation at Break @ Speed 50 mm/min	ASTM D 638	800	%
Flexural Modulus	ASTM D 790	700 (102000)	MPa (psi)
Surface Hardness	ASTM D 2240	60	Shore D
ARM Impact Strength @ -40°C (5.5 mm rotomolded sample)	ARM Method	27 (110)	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.

¹ Depending of tank thickness which is designed by height, diameter and specific gravity of fluid.

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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 M3804RU/RUP and M20 color compound are about 180°C but 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.
- M3804RU/RUP is not recommended for extrusion into color compound. If used, must add additional antioxidants during extrusion process.
- M3804RU/RUP and M20 are not recommended for parts which exceed 5 mm or 30 min heating.
- M3804RU/RUP and M20 are 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
- Color compound 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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