



Technical Data Sheet

Product Name
SCGC™ LLDPE

Product Type
Polyethylene for Rotational Moulding

Product Grade
M9001RW / M90

Product Description

SCGC M9001RW is a linear-low density polyethylene (LLDPE) for rotational moulding applications. M9001RW is a natural color available in a pellet and powder form, whereas M90 is the color compound version. This grade is suitable for rotational moulding of large water tanks and parts that require high stiffness.

Typical Application

- Large tanks (5,000-22,500 liters)
- Agricultural storage tanks
- Material handling containers
- Kayaks
- Manholes
- Thick wall parts (10 mm and above)
- Septic tanks
- Underground water tanks

Product Characteristics

- High stiffness and impact strength
- High thermal stability up to 1 to 5 hours of heating
- High UV protection (UV20) for outdoor use

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.
- Meet the requirements of AS/NZS 4020:2018 for drinking water.
- Meet Thai Industrial Standard TIS 816-2565
- For compliance of specific colors, please contact our technical services.

Physical Properties

Properties	Test Method	Typical Value	Unit
Melt Flow Rate @ 190°C, 2.16 kg	ASTM D 1238	3.2	g/10 min
Density	ASTM D 1505	0.939	g/cm ³
Melting Point	ASTM D 2117	127 (260)	°C (°F)
Crystallization Point	ASTM D 2117	113 (236)	°C (°F)
Heat Deflection Temperature @ 0.455 MPa	ASTM D 648	70 (158)	°C (°F)
Vicat Softening Temperature	ASTM D 1525	117 (243)	°C (°F)
Mechanical Properties			
Tensile Strength at Yield @ Speed 50 mm/min	ASTM D 638	21 (3100)	MPa (psi)
Tensile Strength at Break @ Speed 50 mm/min	ASTM D 638	28 (4100)	MPa (psi)
Elongation at Break @ Speed 50 mm/min	ASTM D 638	1100	%
Flexural Modulus	ASTM D 790	740 (107000)	MPa (psi)
Surface Hardness	ASTM D 2240	60	Shore D
ARM Impact Strength @ -40°C (5.5 mm rotomolded sample)	ARM Method	29 (118)	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 M9001RW/RWP and M90 color compound are about 200°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.
- Due to a slightly off-white color, M9001RW/RWP is not recommended for finished products that require pure-white appearance.
- 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.
- 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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