



TECHNICAL DATA SHEET

Product Type

Polyethylene for Rotational Moulding

Product Name

SCG LLDPE

Product Grade

M9001RW / M90

Product Description

SCG 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 Applications

- 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 1.5 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 4020:2005 for drinking water
- Meet Thai Industrial Standard TIS 816-2556
- For compliance of specific colors, please contact our technical service.

Product Properties

Property	Test Method	Typical Value	Unit
Resin Properties			
Melt Flow Rate	ASTM D 1238 @ 190 °C, 2.16 kg	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	ASTM D 648 @ 0.455 MPa	70 (158)	°C (°F)
Vicat Softening Temperature	ASTM D 1525	117 (243)	°C (°F)
Mechanical Properties			
Tensile Strength-at-Yield	ASTM D 638 @ Speed 50 mm/min	21 (3100)	MPa (psi)
Tensile Strength-at-Break	ASTM D 638 @ Speed 50 mm/min	28 (4100)	MPa (psi)
Elongation-at-Break	ASTM D 638 @ Speed 50 mm/min	1100	%
Flexural Modulus	ASTM D 790	740 (107000)	MPa (psi)
Surface Hardness	ASTM D 2240	60	Shore D
ARM Impact Strength @ -40 °C	ARM Method (5.5 mm rotomoulded sample)	29 (118)	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 construed 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

- Finishing rotational parts by flaming, using scrap/filler in compound formulation, or dry blending pigment > 0.3% can decrease mechanical properties of rotational parts, which is not recommended.
- 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.

Product Technical Assistance

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

Product Available Forms

- Natural pellet (M9001RW)
- Natural powder (M9001RWP)
- Color compound pellet (M90)
- Color compound powder (M90)

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.
- 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 horizontal.



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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 service.

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 service.

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 service.
- 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
 - Statement on compliance to food contact regulations

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.