

Product Description

M9001RW and Marvel M90 are linear-low density polyethylene (LLDPE) for rotational molding applications. M9001RW is a natural color available in a pellet and powder form, whereas M90 is the color compound version. These grades are suitable for rotational molding 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)

Product Characteristics

- High stiffness and impact strength
- High thermal stability up to 1 to 1.5 hours of heating
- High UV protection for outdoor use
- Meet the requirements of U.S.21 CFR F.D.A. regulation Part 177.1520 clauses (C) for food contact use
- Meet Thai Industrial Standard TIS 816-2556
- Meet the requirements of AS/NZS 4020:2002 for drinking water

Physical Properties

Properties	Test Method	Value*	Unit
Resin Properties			
Melt Index	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, 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	ASTM D 638 @ Crosshead speed 50 mm/min	21 (3100)	MPa (psi)
Tensile Strength-at-Break	ASTM D 638 @ Crosshead speed 50 mm/min	28 (4100)	MPa (psi)
Elongation-at-Break	ASTM D 638 @ Crosshead 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 rotomolded sample)	29 (118)	J/mm (lb-ft)
Brittleness Temperature	ASTM D 746	<-60 (-76)	°C (°F)

*Value quoted are the result of tests on representative natural samples and product supplied in all respects.

Processing Guidelines

Molding cycles depend on mold 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 is about 200 °C; however, the PIAT of M90 color compound varies depending on color shade.

Points of Concerns

- Finishing rotational parts by flaming, using scrap/filler in compound formulation, or dryblending 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.

Product Technical Assistance

For technical assistance or further information including other applications, and a chemical list for chemical tanks on this grade or any other products, please contact Technical service engineer.

Product Available Form

- **M9001RW** = Natural pellet with high level UV resistance (UV20)
- **M9001RWP** = Natural powder with high level UV resistance (UV20)
- **Marvel M90** = Color compound powder with high level UV resistance (UV8/UV20)

** Remark : The natural pellet and powder are slightly yellowish in appearance after molded; therefore, it is recommended to be used as colored parts.

Product Packaging

- 25 kg loose bag
- 25 kg bag on pallet

SCG ICO Polymers Company Limited





Technical Datasheet

Polyethylene for Rotational Molding

EL-Lene™

M9001RW/M90

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 not be slopped.

EL-Lene™ EL-Pro™ EL-Wax™



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