

Product Description

M9001RW and Marvel M90 are linear-low density polyethylene (LLDPE) for rotational molding applications. M9001RW is a natural color available in powder and pellet form, whereas M90 is a color compounded form. With excellent stiffness good impact strength and toughness. Both of them are suitable for rotational molding of large water tanks and other general rotational molded articles.

Typical Applications

- Large tanks (5,000-22,500 liters)
- Agricultural storage tanks
- Material handling containers
- Kayak
- Manholes

Product Characteristics

- 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 816-2538 (1995)
- Meet the requirements of AS/NZS 4020 : 2002 for drinking water
- Excellent rigidity and toughness
- Broad processing window

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 (HDT)	ASTM D 648	75 (167)	°C (°F)
Vicat Softening Temperature	ASTM D1525	122 (252)	°C (°F)
Mechanical Properties			
Tensile Strength-at-Yield	ASTM D 638 @ Crosshead speed 50 mm/min	210 (21)	kg/cm ² (MPa)
Tensile Strength-at-Break	ASTM D 638 @ Crosshead speed 50 mm/min	280 (28)	kg/cm ² (MPa)
Elongation-at-Break	ASTM D 638 @ Crosshead speed 50 mm/min	1100	%
Flexural Modulus	ASTM D 790 @ Crosshead speed 2 mm/min	7500 (750)	kg/cm ² (MPa)
Surface Hardness	ASTM D 2240	60	Shore D
ARM Impact Strength @ -40°C	ARM Method (5 mm rotomolded sample)	25 (90)	J/mm (lb-ft)
Brittleness Temperature	ASTM D 746	<-60 (140)	°C

*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 the PIAT of our M90 colored products are varied by color shade.

Point of concern

- Finishing rotational part by flaming, using scrap/filler in compound formulation, or dryblending pigment > 0.5% can decrease mechanical properties of rotational part which is not recommended.

Product Technical Assistance

For technical assistance or further information including other applications, and chemical list for chemical tank 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 (35 mesh) with high level UV resistance (UV20)
- **Marvel M90** = Color compound powder (35 mesh) with high level UV resistance (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

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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.

Safety

- The product is not classified as a hazardous material.
- Please see our Material 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 Material Safety Data Sheet for details on various aspects of safety, recovery and disposal of the product, for more information contact your SCG Chemicals technical service.

Related Documents

- The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.
- Material Safety Data Sheet
- Statement on compliance to food contact regulations

Disclaimer

- This product(s) can be used only for the application as specified hereabove.
- To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability whatsoever for the accuracy and completeness of such information.
- We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.
- It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.
- No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.